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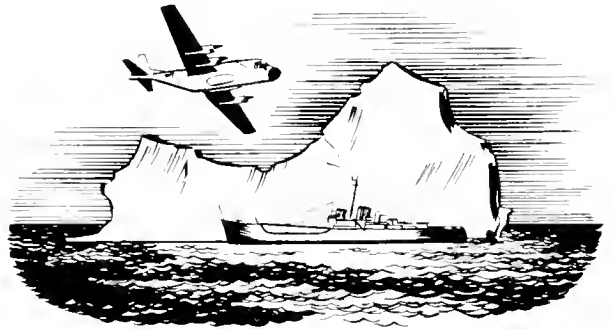
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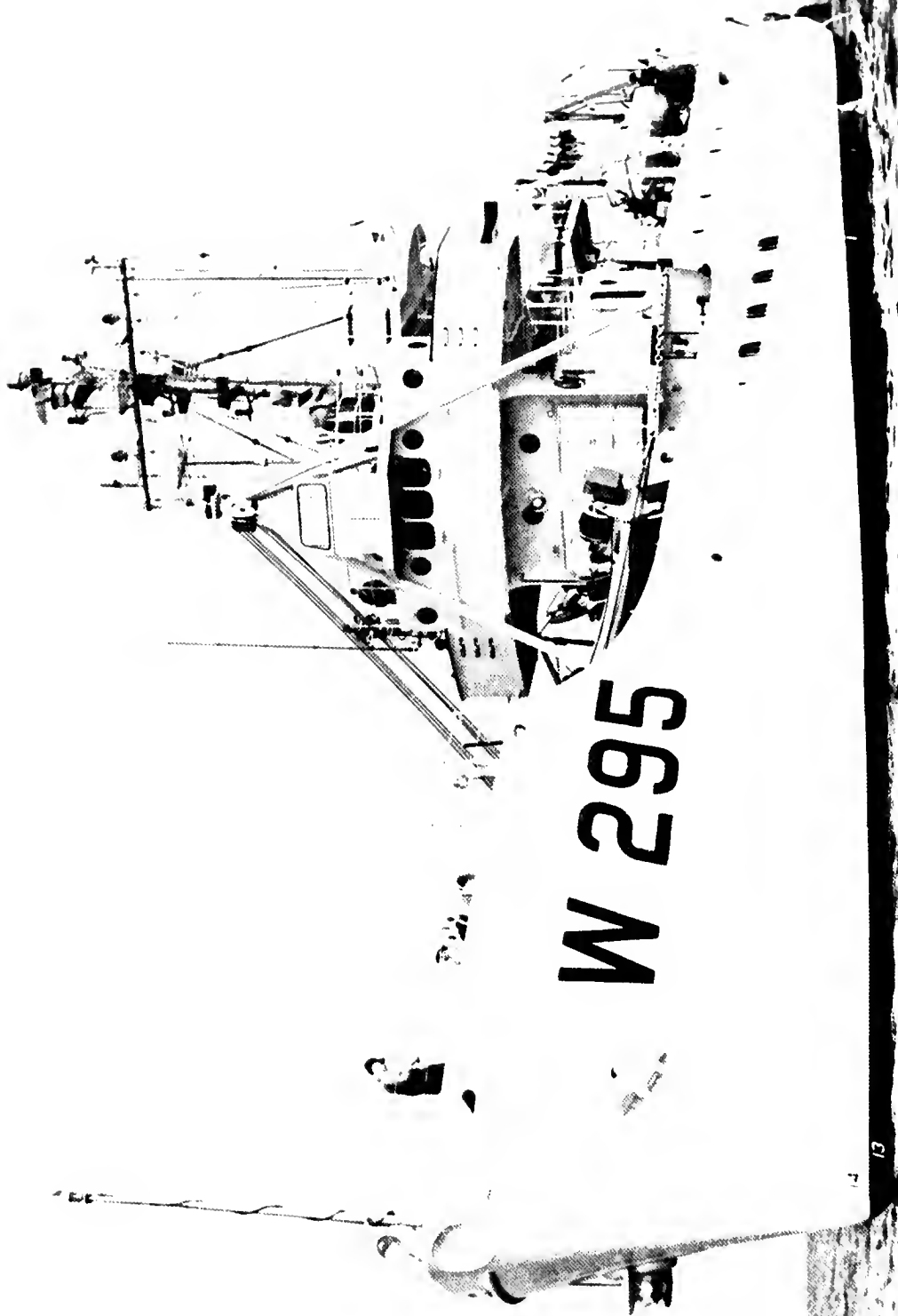
OCEANOGRAPHY OF THE LABRADOR SEA IN THE VICINITY OF HUDSON STRAIT IN 1965

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Abstract

From the data collected on the Labrador Current Expedition, July–August 1965, there is indicated substantiation of the current system defined by Smith (1937), “Marion Expedition.” The data further shows that Hudson Strait exercises a control on the Labrador Current to the extent that a characteristic water type is formed and pulsed eastward by tidal variations through the strait entrance, forming the cold core and main flow of the Labrador Current. Contributions from the Baffin Land Current, flowing westward into Hudson Strait along the northern shore, appear to form one of the mixing constituents; with Hudson Bay acting as a modifier tending to warm and dilute the waters prior to their outflow along the southern shore of Hudson Strait.

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Contribution to and Effect of the Hudson Strait Outflow on the Labrador Current

By RONALD C. KOLLMAYER, U.S. Coast Guard

INTRODUCTION

An oceanographic expedition to the western Labrador Sea, under the control of the International Ice Patrol Section of the Coast Guard Oceanographic Unit, Washington, D.C., was conducted during July and August of 1965. The purpose of the expedition was to gather quantitative physical and chemical data from the upper reaches of the Labrador Current. The survey trackline and station locations are shown in figure 1.

Knowledge of the circulation of the upper reaches of the Labrador Current, and its relationship to the Hudson Strait entrance, Baffin Land Current, and the western Labrador Sea has been primarily derived from Smith (1937). His studies were based on the various cruises of the Coast Guard cutters MARION and GENERAL GREENE. This work has formed the heart of the published information concerning the area. In recent years, Dunbar (1951) has discussed the entire region, including the area west of the Hudson Strait entrance and cited the lack of quantitative knowledge in the Baffin Bay, Labrador Sea, and Hudson Strait areas.

The main circulation features postulated by Smith (1937) are shown in figure 2. The primary interest of the present investigation conducted by the International Ice Patrol, centers around the entrance to Hudson Strait. As can be seen, Smith depicts much of the Baffin Land Current being deflected into Hudson Strait both north and south of Resolution Island. He also shows a large outpouring from Hudson Strait just north of Cape Chidley. The area outlined in figure 2 could be tagged as the "birthplace" of the Labrador Current. Smith (1937) points out that in this area three water masses join to form the southward flowing Labrador Current which can be followed down to the southern tip of the Grand Banks of Newfoundland. He envisioned the Baffin Current, from the north, joining and mixing

with both the Hudson Strait outflowing and the recurved West Greenland Current, resulting in the formation of the characteristic Labrador Current. This joining of the water masses accounted for the two distinct bands or filaments of the current; an inshore portion, cold and low in salinity, and an offshore portion of warmer more highly saline water moving swiftly along the shelf break.

Smith postulated the circulation in and out of Hudson Strait from iceberg and sea ice observations. He noted the lines of icebergs moving into the strait on the northern side and iceberg movement out of the strait along the southern limits, off Cape Chidley. He also noted the rather diffuse movement of the icebergs to the east of Resolution Island indicating a definite weakening of the southward flow in that area. This information was supported by many oceanographic stations to the east of Resolution Island, but only four stations across the entrance to Hudson Strait. These four stations were insufficient to describe the property distribution and did not permit any detailed examination of the quantitative transport and exchange through the strait.

No data was obtained by Smith concerning the water exchange just north of Resolution Island. His data north of this area, at the latitude of Loks Land, shows that the Baffin Land Current narrows, accelerates and at least in part appears to turn into Hudson Strait through Gabriel Strait.

Velocity values calculated by Smith show a much stronger current flowing south of Hudson Strait than was found to the north. This acceleration was attributed to both the Hudson Strait discharge and the convergence of the West Greenland Current. Smith also speculates that the land drainage from Hudson Bay Basin alone indicates that the discharge through Hudson Strait probably exceeds the inflow.

Campbell (1958) presented the most comprehensive study to date of the circulation in Hudson Bay, Fox Basin, and Hudson Strait. It was quan-

titative in nature and presented the detailed circulation features of Hudson Strait which were speculated on by Smith (1937). Campbell's data were obtained during the autumn 1955 and summer 1956 and shows the seasonal influences on the areas. This work provides the complementary data needed to connect the circulation and interchanges occurring across the entrance to Hudson Strait as found during the subject 1965 expedition.

The generalized circulation picture for the northwestern part of the Labrador Sea is quite clear. The oceanographic sections occupied during the 1965 expedition were specifically designed to describe in detail the contributions of the water masses that make up the Labrador Current and to quantitatively describe the interchange at the Hudson Strait entrance.

Recent findings as to seasonal and annual variations in temperature and volume flow of the Labrador Current has initiated new thoughts concerning spring iceberg threat predictions on the Grand Banks. Fluctuations in the heat and volume transport of the Labrador Current, coupled with the variations in available icebergs during the spring, tend to cause the iceberg threat of one year to differ sharply from another. Iceberg mortality during transit from north to south, particularly along the coast of Labrador, is greatly influenced by the temperature and velocity of the Labrador Current. This is particularly true in the current area west of the swiftest flowing boundary filament, flowing along the shelf break, which divides the cold, low salinity water to the west from the warm, saltier water of the Labrador Sea. This inshore or shelf portion of the Labrador Current acts as the deep freeze which conveys the icebergs south. Water properties in this current band are characteristically cold, less than 2°C ., and low in salinity, less than 34.0‰. This property combination results in lighter water than that found in the more saline Labrador Sea and accounts for the boundary or frontal zone which generally lies along the shelf break. These horizontal property differences, between the coastal water and the Labrador Sea, sets up the west to east pressure gradient which results in the southward transport along the western boundary of the Labrador Sea. Smith (1937) points out that variations in the amount of light, low salinity water available along the Labrador coast will cause variations in the velocity of both the boundary current filaments and the inshore water mass that carries the icebergs

south. Likewise the temperature of this water not only influences the current velocity but also dictates the deterioration rate of the icebergs as they are transported south. An understanding of the origin and control of this characteristic water mass will ultimately allow perfection of ice season severity predictions when combined with knowledge of the count of available icebergs which are to be transported south.

NARRATIVE

The oceanographic expedition was conducted by the CGC EVERGREEN, a 180-foot buoy tender class oceanographic vessel, in support of the International Ice Patrol.

The expedition departed Boston, Mass., on 19 July 1965, and arrived at the first oceanographic station (9409) off the coast of South Wolf Island, Newfoundland, on 25 July 1965. The stations shown on figure 1, were occupied in a serial manner, terminating on 13 August 1965, at station number 9508 in the center of the southern end of the Labrador Sea.

Sea ice along the coast of Labrador and Baffin Island offered no obstacle to the survey work. Most of the ice fields encountered averaged from two-tenths to four-tenths and generally the vessel's speed of advance was maintained at 10 knots making good the base course. Two heavy fields of ice were encountered where the ice had been packed in strings up to 15 feet thick by the wind. The EVERGREEN was delayed approximately 2 hours by these floes which were mostly rotten ice and in general easily pushed aside or cracked apart. Most of this ice was encountered off Cape Dyer, Baffin Island, on the northern most section occupied. No accurate count was kept of the icebergs sighted but a gross estimate is that 150 icebergs, mostly grounded, were passed and sighted either visually or on radar.

Oceanographic stations generally consisted of electronic bathythermograph lowerings, Nansen casts, and bottom sampling. One hundred Nansen casts, sixty-nine core or grab samples, and one hundred forty-five electronic bathythermograms were obtained. The distribution of these samplings are shown in figure 1.

Teflon-lined water sampling bottles of the Nansen type, manufactured by the Ballauf Manufacturing Co. or the United Machine Co., were used during the expedition. Temperatures were measured with protected deep sea reversing

thermometers manufactured by Richter and Wiese, Kahl Scientific Instrument Corp., and Walter H. Kessler Co., Inc. The temperatures were obtained from paired averages and are considered accurate to $\pm 0.01^\circ \text{C}$. The salinity of each sea water sample collected was measured with an RS-7A inductive salinometer manufactured by Industrial Instruments Corp. It is considered that the precision of measurement was within $\pm 0.005\%$ and that the accuracy of the reported salinities is $\pm 0.01\%$. Water samples were also obtained for dissolved oxygen analysis by the Modified Winkler method according to the method described by Jacobson et al. (1950). Additional water samples were bottled and frozen for later analyses of the nutrient content by David A. McGill of the Woods Hole Oceanographic Institution, and the results are included as a separate paper.

The temperature distribution of the water in the upper 400 meters was examined just prior to making a Nansen cast and at many locations between Nansen stations. This was accomplished by using a Hytech Corp., electronic bathythermograph (ELBT) Model 480 MOD 1.

A standard Phleger, 1 foot, gravity corer was used to obtain samples of the sediments at selected locations. In areas of rock and sand bottoms, clamshell grabbers and orange peel bucket samples were used. These samples are still being analyzed, and therefore the data are not presented herein.

DATA TREATMENT

The temperature and salinity data obtained at each station were processed on the Digital Equipment Corp. PDP-5 computer as discussed by O'Hagen (1964), and Morse and O'Hagen (1964). This was accomplished shortly after the completion of each station. Values of sigma-t and dynamic heights based on the 1,000-decibar level were determined at each sample depth. Computer interpolation for the Ice Patrol standard levels was performed according to Kollmeyer (1964).

The oceanographic work was under the direction of Lt. Comdr. Ronald C. Kollmeyer, USCG, who was assisted by Mr. Thomas C. Wolford, oceanographer, Lt. (jg.) John Goras, USCGR, and Mr. John Flick, electronic technician. Technical assistants were William H. Harrell, sonarman first class, David J. Wood, sonarman second class, Edward S. Olszewski, sonarman second class, William F. Heller, aerographer's mate sec-

ond class, and James D. Brower, aerographer's mate third class.

Dynamic heights of the sea surface were summed using both observed specific volume anomaly values and the interpolated standard depth values. Determinations of dynamic heights in shallow water were performed in the manner described by Helland-Hansen (1934). This method assumes that level isosteric surfaces extend from the water-sediment interface, on the continental slope, into the bottom of a point directly below the next serial station. This method allows the extension of the pressure surfaces, related to the 1,000-decibar level of no motion, above the shelf as far as the coast. Facilitation of these shallow water computations is accomplished by constructing a property section, along a line of stations, for both temperature and salinity. The isotherms and isohalines are then extended or extrapolated to points along the bottom. Where doubt existed as to isopleth contours near the bottom, vertical distribution curves of temperature and salinity for the questioned stations were drawn and the required bottom data extrapolated. By this procedure, temperature and salinity values at the bottom, beneath each station, were established as well as values at significant points of bottom topography slope changes. Data points were then available for temperature and salinity values at the standard depths and along the bottom to supplement the observed values, thereby providing a close approach to completely describing the water column from the surface to the bottom or 1,000 meters as the case may be. All of the data points of temperature and salinity were then processed in the computer and the relative dynamic height at each value point determined.

The depth values of the 26.2 and 27.0 sigma-t surfaces were interpolated by computer from the complete data array. In addition, the nitrite ($N\text{O}_2-N$) concentrations at the depth of these sigma-t surfaces were obtained by computer interpolation thus allowing preparation of isentropic charts with nitrite concentration contours. They are presented in a subsequent section.

Volume flow computations were accomplished by a computer program specifically written to provide transport information through vertical property sections. The program provides volume flow information through solenoids which subdivide a property section into small rectangles. The solenoids are bounded by the data obtained from

adjacent stations at the various standard depth levels as shown in figures 3 and 4. The volume flow information was calculated through each solenoid using the following equations:

$$\bar{V} = v_m \times A \quad (1)$$

$$v_m = \frac{10(\bar{D}_A - \bar{D}_B)}{fL} \quad (2)$$

$$A = d \times L \quad (3)$$

\bar{V} = volume flow

v_m = mean water velocity within the solenoid

A = area of solenoid bounded by station location and standard depths

$(\bar{D}_A - \bar{D}_B)$ = difference between the mean dynamic height values of adjacent stations, based on 1000-decibar level, at a point between the upper and lower standard depth values bounding the solenoid

f = coriolis force

L = distance between adjacent stations

d = vertical distance between the standard depth values bounding the solenoid

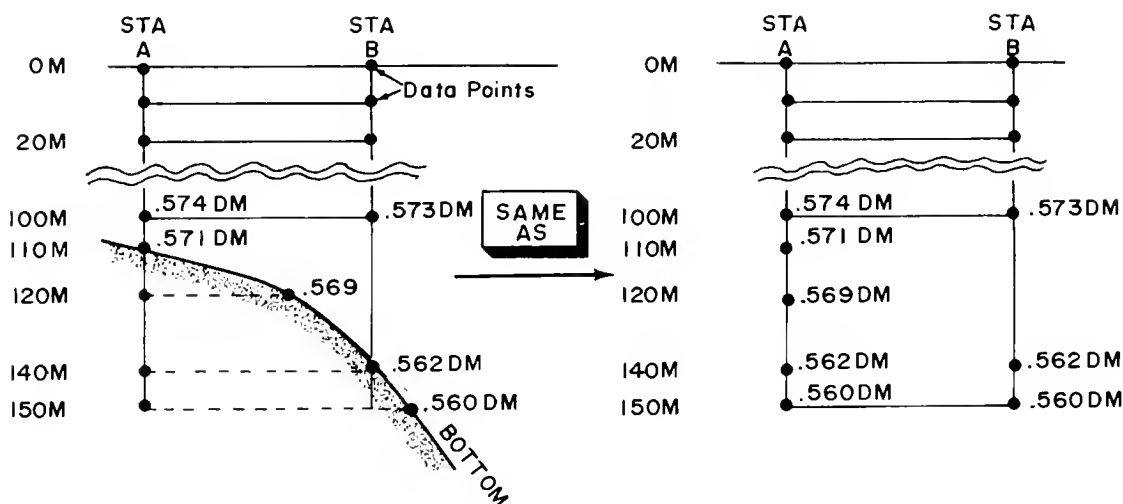
Combining equations (1), (2), and (3):

$$\bar{V} = \frac{10(\bar{D}_A - \bar{D}_B)d}{f} \quad (4)$$

The volume flow calculations are now independent of the distance between adjacent stations. This allows simplified volume flow computations through solenoid located along the bottom in shallow water. Data points along the bottom at significant slope changes within a particular solenoid can therefore be treated like data obtained from the nearest station higher on the slope as shown below.

The computer receives the previously determined dynamic height values at the standard depth boundaries and any values in between for the particular solenoid being examined. It then, computes the mean dynamic height within the standard depth boundaries for each of the two stations bounding the solenoid and thus arrives at a figure for $(\bar{D}_A - \bar{D}_B)$. Equation (4) is then automatically solved and the volume flow results with the dimensions of $10^6 \text{m}^3/\text{sec}$. The direction of flow is indicated by a plus or minus sign in the answer.

By the above-described process, an entire section can be broken into the desired solenoids and the entire volume flow, magnitude and direction can be determined. Summations of the solenoids by direction of transport or other unique property may be made, thus allowing the computation of salt and heat transports. More detail in the resulting transport description can be obtained by closer vertical sample spacing and by closer station spacing thereby resulting in a greater number of solenoids within a given section.



Property transport of heat and salt were computed for each solenoid in the survey sections using the following equations:

$$Q_t = \bar{V} \times T_m \quad (5)$$

where

Q_t = heat transport °C. m³/sec

T_m = mean value of the temperature within the solenoid

V = volume flow

and

$$M_s = \bar{V} \times S_m \times \rho_m \quad (6)$$

where

M_s = salt transport (10⁸) gms/sec

S_m = mean value of the salinity within the solenoid

ρ_m = M³ density of seawater

V = volume flow

Equation (5) is not a true heat flow calculation, however this method is representative of the heat and allows intercomparison of the heat flow through the various sections. The mean temperatures are arrived at for each solenoid by using a weighted mean obtained from the isotherm distribution of the property sections. Equation (6) gives the grams of salt transported through each solenoid. The mean salinity was determined, similar to the mean temperature, by using the salinity distribution sections. A mean density (ρ_m) of 1.03 gms/cm³ was selected to speed computations. Actual densities range from 1.025 gms/cm³ to 1.028 gms/cm³. However, the error in rounding to 1.03 gms/cm³ is negligible compared to the estimated error of 10 percent for the overall procedure.

Figures 3 and 4 show the diagrammatic construction of a volume-salt-heat transport section. Each solenoid contains 6 values resulting from the above calculations. These values are: direction of movement, volume flow, mean temperature, mean salinity, heat flow, and salt transport. This allows the summing of the data contained in the various solenoids according to the desired presentation or analyzation of the data. For example: in this paper direction of movement was considered along with particular water characteristics. Solenoids which contained water at a temperature of less than 2.0° C. and a salinity of less than 34.3‰ were summed. These solenoids are

emphasized in figures 3 and 4 by solid outlines for southward-moving water and dashed for northward-moving water.

The computer reduction of the volume flow data eliminates the traditional subjective velocity curve drawings and makes the sections more comparable because of their uniformity of treatment. The method is limited by the recognized errors of dynamic height computations in addition to the errors and assumptions included by working in shallow water. It is believed however, that this procedure is as accurate as any indirect method presently in use.

ISENTROPIC ANALYSIS

Analysis of surfaces of equal entropy was attempted for the area adjacent to the entrance to Hudson Strait. Sigma-t surfaces, although not coincident with true isentropic surfaces, are considered a close approach for purposes of analysis. Kollmeyer (1966), depicted the core of the Labrador Current using this method and showed pictorial differences between presenting isotherms at horizontal depth levels versus presenting them on sigma-t surfaces. The isotherms on the sigma-t surfaces clearly displayed the cold core of the Labrador Current whereas the horizontal isotherm plots showed only a west-to-east temperature gradient. A similar treatment of the data is attempted herein, except for the fact that nitrite ($NO_2 - N$) data are contoured on the sigma-t surfaces in lieu of temperature data. In addition, the topography of the sigma-t surface is shown.

According to Montgomery (1938), the movement of the water masses are defined for flow direction by the contours of the property distribution. Nitrites were chosen as the property to be contoured because they are independent of the density and the properties which determine density, and form an independent chemical property to examine on the surface. There seems to be some relationship between the maximum nitrite concentration and the temperature minimum zones in the area of analysis. Figure 5 shows the depth of location of the temperature minimum and the depth of the nitrite maximum. In the areas of the cold cores of the Labrador Current, the nitrite maximum is located well below the minimum temperature. In the warmer areas, on the eastern edges near the Labrador Sea and the near-shore water, the minimum temperatures generally coin-

cide with the maximum nitrite concentrations. No nitrite minimum is indicated within the cold cores. This separation between the temperature minimum and nitrite maximum within the colder water core is of interest because it adds still another property anomaly that may be used in the study of the cold water forming the Labrador Current. At present, the only inference that can be made to the above-mentioned phenomena is that the cold core(s) of the Labrador Current appear to be intrusive in the area. That is to say that the cold cores are filaments moving through water on the shelf which could be considered resident water experiencing slower movement. This resident water is more at equilibrium with the environmental and biological conditions than the intrusive water. Oceanic areas generally exhibit a nitrite maximum at or just below the thermocline at about 75 meters according to Sverdrup, et al. (1942). This is the case, as can be seen in figure 5, for all the waters except the cold cores of the Labrador Current.

In those sections which describe the Baffin Land Current to the north (stations 9477-9508) the nitrite maximum occurs above the temperature minimum; however, close examination of the data in this area discloses that due to the large amounts of cold homogenized water, the true temperature minimum is not clearly defined. Furthermore, it can be seen that the nitrite maximum actually lies just below the thermocline as in all the other areas shown in figure 5 with the exception of the cold core of the Labrador Current.

The nitrite concentrations generally varied widely in vertical and horizontal distributions and, except for a few instances, nitrite was never completely absent.

Figure 6 is a plot of the 26.2 sigma-t surface showing both the depth contours of the surface and the nitrite concentrations. The striking slope of the sigma-t surface clearly defines the limits of the water with the particular density of 1.0262 gms/cm³. A sea surface intersection with the sigma-t surface tends to indicate the movement of the water masses into Hudson Strait on the northern side and out the southern side. No water of density of 1.0262 gms/cm³ was found in the section running east of Resolution Island. This indicates the lack of any flow connection, above the 25-meter level, between the water lying to the north and south of Resolution Island.

The 26.2 sigma-t surface north of Resolution Island intersects the sea surface to the east and south

but is relatively flat in topographic description to the west. There exist an almost uniform depth level of about 25 meters which extends west to the coast of Baffin Island.

To the south of Resolution Island the 26.2 sigma-t surface slopes much more steeply in the strait entrance and along the Labrador coast. Intersection of the sigma-t surface with the bottom can be seen near the Labrador coast. The topography, in this area, goes to greater depths and is not flat like that to the north. The surface extends below 100 meters in an area just off the mouth of Hudson Strait and in general lies below the 50-meter depth level. This great difference in depth level, north and south of Resolution Island, indicates that greater quantities of lighter water seem to be present south of Resolution Island.

The great slope of the sigma-t surfaces imply severe slopes of the isobaric surfaces and qualitatively indicate the circulation in the area. The contours of the nitrite concentrations tend to support these circulation patterns.

It is quite apparent from figure 6 that the water flow is into Hudson Strait north of Resolution Island and out of the strait south of Resolution Island with no north-south flow connection shown for water of this density. The broad contours of nitrites to the north are nondescriptive because of their uniformity. To the south, however, there exists a tongue of higher nitrites emanating from inside the point of Cape Chidley and flowing out in a broad pattern. Somewhat isolated to the east is a second nitrite concentration giving indication of a pulselike structure in the flow pattern coming from the strait. This pulselike structure can also be observed in the depth of the sigma-t surface coincident with this higher nitrite concentration pulse. The topography here dips to a depth in excess of 100 meters, thus indicating a slug or pulse of lighter water moving through the area.

Figure 7 shows the 27.0 sigma-t surface. Again, nitrite concentrations as well as the topography are contoured on the sigma-t surface. This surface intersects the sea surface in only a limited area just to the northeast of Resolution Island. This is an area of flow direction transition where lighter water, on the left side of the flow pattern moving into Hudson Strait, is in close proximity with the heavier water flowing south, just east of Resolution Island. Here again the general flow patterns

are shown in both the slope of the sigma-t surface and the nitrite distribution. The 27.0 sigma-t surface slopes in varying degrees, from a level of 50 meters, westward to intersect with the bottom along both the Baffin Island and Labrador coasts. To the east of Resolution Island, the surface remains quite level, at 50 meters, to within 20 miles of the coast and then abruptly deepens southward to a depth in excess of 250 meters. To the north of Resolution Island, the surface dips slightly below 150 meters before intersecting the bottom. Here again is the indication of the existence of lighter water to the south of the entrance to Hudson Strait. Lesser amounts of this light water exists to the north of the strait entrance and is virtually absent due east of Resolution Island.

The circulation depicted by the nitrite concentration supports the flow pattern shown by the sigma-t surface slope. Water movement at these depths are indicated as being into the strait on the north, and south of Resolution Island and out in the center of the entrance between Resolution Island and Cape Chidley. The outflow of water appears again to assume a slug or pulselike structure described by both the nitrite distribution and the contours of the sigma-t depth topography. In this case the water moving out of the entrance appears to be of minimum nitrite concentration, deflecting or distorting the water of higher concentrations which are flowing from the north, immediately to the east of Resolution Island.

DYNAMIC HEIGHT CHARTS

A dynamic height chart of the area adjacent to the entrance to Hudson Strait was constructed to provide quantitative current information. This chart is presented as figure 8. As previously mentioned, all dynamic heights are computed relative to the 1,000-decibar level of assumed no motion. No direct current measurements are available in this area to provide a comparison with absolute values. The concept of "relative" currents is useful however; because the question of relative contributions of the several water masses in the area to the Labrador Current was the primary concern of the expedition.

One basic assumption required in the dynamic treatment of oceanographic data is that of steady state. That is, conditions are such in the area of consideration, that the various forces acting on the water are in a dynamic equilibrium. In the steady state situation, an adequate description of

the pressure distribution, resulting from the mass distribution, will describe the water movements relative to a reference level.

There exists great doubt as to the existence of any equilibrium attainment of the forces in the vicinity of the entrance of Hudson Strait because of tides and the resulting tidal currents. These tidal movements result in water being moved independent of the more discrete pressure-mass distribution forces. The tides in this area are semi-diurnal and relatively equal. With a discrete pressure-mass distribution force impressed on the oscillating tidal movement, the resulting net movement would be governed by the direction of the pressure-mass distribution force. It would be expected that this long term net movement would be reflected in a description of the mass distribution obtained from the point sampling of temperature and salinity. A major redistribution of the mass features in the entrance of Hudson Strait by the tidal currents seems unlikely because of the directional changes of the tidal currents every 6 hours. With the quantities of water present, the time frame for redistribution appears much too short.

The current and volume flow data calculated from the mass distribution in the area would certainly not be representative of the instantaneous particle movement, but should be representative of the longer period movement tendencies. These tendencies depicted by the mass distribution should be comparable between the sections of the survey area. With this assumption in mind, the dynamics of the area are presented and extended, in a later section, to include volume flow computations.

Figure (8) shows the surface circulation in and near the entrance to Hudson Strait. The circulation, deduced by the dynamic method matches quite well with qualitative flow depicted from the isentropic distributions. A broad low-velocity Baffin Land current flows from the north towards the entrance to Hudson Strait. A turning to the right of the inshore filaments occurs, resulting in water movement into the strait north of Resolution Island. A convergence of the broad current band located further offshore occurs along with a commensurate acceleration. This jet then flows in to Hudson Strait just to the south of Resolution Island. This is exactly what was indicated on the 27.0 sigma-t level shown in figure (7). The 26.2 sigma-t level, however, showed a shallow flow into the strait north of Resolution Island.

The section east of Resolution Island has relatively flat topography except for the first two stations near the island. The surface waters seem to meander from offshore in towards the island with the 971.0 dynamic meter contour demarking the outboard extremity of the convergence mentioned above. Waters further offshore make a slow circuitous trip towards the strait and then turn back to the east under the influence of the outflow of Hudson Strait. The east-west section off Resolution Island is the area where Smith (1937) cited the delay or hesitation in the movement of icebergs during their trip south.

To the south of Resolution Island, in the strait entrance, high speed currents are displayed. The northern one-third of the strait has the strong westerly current discussed above while the southern two-thirds has a very strong eastward outflow in the center and slight reversal to the west around the islands just to the north of Cape Chidley. A strong outflow in the passage between Cape Chidley and the offshore island is also indicated.

The water flowing out of the strait turns sharply south and commences its passage towards the Grand Banks. The central jet of water passing out of the strait diverges as it turns south. This divergence continues until a broad flat area is developed in the southernmost section of figure 8. To the east of this divergence, offshore waters from the Western Labrador Sea converge towards, and are entrained with, the fast-moving filaments of the current. To the west, the dynamic height of the stations along the coast require the topographic contours to be drawn into the coast. This is an unusual situation and points up the limitations of the dynamic method. In the area just to the east of Cape Chidley, the contours also turned severly clockwise and intersect the coast. In the center of this area, the 971.3 dynamic meter contour forms a loop indicating a circular path or eddy in the water. The area thus described by the contour represents a hill, elevated above the waters to the east and south and violated steady state requirements for geostrophic flow. The light water is definitely present, as indicated in the property sections shown later herein, and should ultimately flow towards a lower geopotential level if the assumption of hydrostatic equilibrium at 1000 meters holds. This means that cross isobaric transport will probably take place before geostrophic flow along the isobars is set up.

Without any direct current measurements in this area, reference must again be made to the isentropic

charts of figures 6 and 7 for comparison. It can be observed that the flow of water, as depicted by the nitrite concentrations, on both the 26.2 and 27.0 sigma-t surfaces, indicate water movement to be generally in a southeasterly direction off the Hudson Strait entrance. This tends to support the dynamics shown in figure 8. To be noted here is the expected coincidence of the 971.3 dynamic meter line which describes an eddy off Cape Chidley, with the depression in the 27.0 sigma-t surface thus indicating the large slug or pulse of light water present in the area.

There is a distinct possibility that this pulse-like structure of the water is a direct result of pumping action caused by the tides. As pointed out above, the pressure-mass distribution indicates a force moving water out of the strait entrance. This force would become the dominant force at the end of the ebb current flowing east from the strait entrance. In this situation, resident water from inside the strait would pass through the strait entrance as the tidal currents ebbed and began to turn, thus allowing a net transport out. This pressure-mass force tending to move water out of the strait would have the effect of prolonging the ebb current and delaying the start of the flood. At this time the characteristic water from inside the strait would pass eastward and turn south prior to the tidal current reversal and the movement of the adjacent waters back into the strait. Because the pressure-mass distribution force is constantly being exerted, less water moves back into the strait than is moved out. As will be shown in a following section characteristic Labrador Current water was found on both sides of Cape Chidley, but very little was found directly in the entrance to the strait. This can be explained by the fact that the major amount of water moving in and out of the entrance by tidal action is a moderate mixture of the water found east and west of the entrance. The data in the area was obtained during a 12-hour period. The tidal current was ebbing when the stations were occupied in the southern half of the entrance, and flooding when stations were occupied in the northern half of the entrance. Because of this, it is believed that the survey vessel was in the wrong part of the strait entrance for observing the outpouring of the characteristic Labrador Current water at the end of the ebb current. This outpouring probably occurs just to the north of Cape Chidley and is supplied by the band of cold low salinity water located just

inside Cape Chidley. A comparison of this water mass with that found outside the strait will be made in a following section.

PROPERTY DISTRIBUTIONS

As stated in the introduction, the main interest of the expedition was to trace, and examine the circulation of the cold low salinity water that makes up what is observed as the Labrador Current off the Grand Banks of Newfoundland. The analysis of the data herein is therefore confined to the consideration of water of this nature. For the purposes of this analysis, an arbitrary water mass was defined on the basis of 17-year mean temperature-salinity relationships. Shown in figure 9 are the mean T-S curves of the three basic water masses found off the Grand Banks. These means are based on International Ice Patrol Surveys during the period 1948 to 1964. The point located on the T-S curve for Labrador Current water defines the limits for analysis of water which has a temperature of less than 2° C. and a salinity of less than 34.3‰. This point roughly confines this water to the upper 200 meters. Using a limiting definition such as this, certain areas contributing water to the volume flow of the Labrador Current are immediately excluded from consideration as sources of the cold portion of the current. The boundaries of this cold water are also well defined in the property sections. Only about 5 percent of the cold, low salinity water found, failed to fulfill the T-S requirements. That is, if the water was less than 2° C. it was almost always less than 34.3‰ in salinity.

These defined limits encompass broad current areas, above the shelf, just inside the swifter flowing boundary current. As mentioned previously, this broad current area provides the cold environment in which the icebergs are transported south. It is also the area of the light water, variations in which cause the volume and velocity fluctuations in the southward flowing current.

The salinities and temperature obtained in the various sections vary quite significantly within the above definition. These variations provide the basis for some of the conclusion drawn in subsequent sections herein.

Figures 10 through 15 present the temperature and salinity distribution along the sections obtained during the expedition. Inserts in each figure give the relative locations of the individual sections. The 2° C. limit is shown by bold lines on

each of the temperature sections. As can be seen, the temperature gradients both horizontal and vertical, become much stronger above the 2° C. isotherm. This provides a useful boundary in the analysis of these water masses.

Figures 10 and 11 show the water properties in the northern reaches of the expedition and includes the line of stations occupied down the center of the Labrador Sea. Section H, taken halfway across the Davis Strait, shows large quantities of cold low salinity water. This is the only section where a considerable disagreement exists between the relative position of the 2° C. isotherm and the 34.3‰ isohaline. In this section, water of higher salinity exists which is much less than 2° C. in temperature. Significant here, however, is the observations that this disagreement exists well below 200 meters and probably represents a water mass of Baffin Bay Basin origin. The section immediately to the south, section G has a much shallower depth, thus this more saline, denser water is prevented from moving south into the area of interest.

Connecting the sections G and H in the west, figures 10 and 11 is section I. Because this section is located in the center of the northern end of the Labrador Sea, it crosses an east to west circulation of portions of the West Greenland Current as well as the eastern edge of the southward flowing Baffin Grand Current. To be noted in this section is the tongue of flow temperature water emanating from Baffin Bay. This tongue narrows and all but disappears to the south in this section. This is because of the east-to-west drift, encountered by the outflowing Baffin Bay water which causes a displacement to the right towards the coast and out of the limits of section I.

To the south, section F shown in figures 12 and 13, running east from Resolution Island shows a lack of water less than 2° C. Water of a salinity of less than 33.0‰ was totally missing. The sections to the north had great quantities of water less than 2° C. and 33.0‰. This supports the circulation regime observed in the dynamic height and isentropic charts where little of the water from the north appears to pass through this section. The water in this section is totally different than that from the north and appears to be supplied by water from the east. One small offshore cold core, and a slightly larger core of cold water near Resolution Island are found in the section.

These small cold cores appear to be the only connection of this section with those to the north. The eastern limits of section F grade warmer and more saline, virtually eliminating any speculation that the water from the north is skirting the easternmost stations.

With the east eliminated as a pathway for the cold, low-salinity water from the north, section E would therefore represent one route taken by this southward moving water. Section E displays the considerable amounts of cold, low-salinity water expected. The cold core observed in section F, close to Resolution Island represents the other route taken by this water. This flow of water from the north was described in both the dynamic height and the isentropic charts. After leaving section F, the cold water turns to the west, just south of Resolution Island and flows into Hudson Strait.

Section D, across the entrance to Hudson Strait, shows cold, low-salinity water in stations 9457 and 9458 just south of Resolution Island. In the deeper half of section D, warmer, higher salinity water is present, similar to that found in section F and probably connected with it. The isotherms and isohalines are severely sloped downward to the south in section D and show the existence of water lower in salinity than has been found thus far. Section D', obtained just inside of the strait entrance shows similar salinities, but much lower temperatures. This same situation exists in section C, figures 14 and 15, taken east of Cape Chidley. Lower salinities than found to the north are present along with reasonably cold water. The circulation has already been shown to be out of the strait through D', D, and C. The water property sections supports this with the exception of the lack of any very cold water directly in the strait entrance, section D. This has been discussed in the previous section and will be mentioned again in the treatment of T-S curves below.

The shelf depth to the south of section C becomes shallower, probably accounting for, in part, the anomalous dynamic height contours and the apparent damming or buildup of low density water in the western half of this section. Section B and A to the south, show the cold, low salinity cores of the Labrador Current.

Section J, figures 14 and 15, is presented for general interest showing the uniformity in temperature and salinity of the central Labrador Sea down to Ocean Station BRAVO. Only in the north are there any characteristic differences.

This small core of lower temperature-salinity water represents the southern boundary of the westward flowing filaments of the West Greenland Current.

TEMPERATURE-SALINITY RELATIONSHIPS

Figures 16 and 17 show the T-S diagrams for each station taken in the vicinity of the Hudson Strait entrance. On each T-S diagram there is a cross (+) giving the location of the upper limits of the defined water mass of 2° C. and 34.3‰. Shown also is a comparative diagram of the 17-year mean of the water mass characteristics of the Labrador Current.

Comparing the eastern ends of sections G, F, C, and B of figures 16 and 17, the rather abrupt changeover of the water mass characteristics is apparent. As the easternmost stations are approached, the T-S relationships changes from within the defined limits to completely outside, thus forming a good eastern boundary for later volume analysis. Section F shows very little of the defined water except at stations 9471 and 9470. However, there is still a profound change in the T-S relationships offshore between stations 9465 and 9464. The warm, saline waters located at the eastern ends of these sections are those of the Labrador Sea. The transition zones between the characteristic defined water and that of the Labrador Sea, are naturally coincident with the swift flowing boundary current shown in the dynamic height chart figure 8.

The water characteristics of section E match very well the characteristics of the water to the north in section G. This, as pointed out above, seems to be one of the paths that cold water takes flowing from the north. Stations 9471 and 9470, of section F, are a second path taken by this water as it flows south and can be followed through Hudson Strait entrance, section D, at stations 9458 and 9457. The water flowing south in the vicinity of stations 9469 through 9566 of section F, seems to match characteristics with the waters at stations 9437 and 9436 of section C. This agrees quite well with the dynamics shown in figure 8 where an area of low topographic definition displays a slow meandering current which moves west and then recurves to the southeast and flows through section C.

In section D, station 9455 appears to be at the transition zone between the characteristically lower salinity water running out of Hudson Strait and

the slightly higher salinity water running in. The T-S diagrams of section D abruptly shift toward the lower salinity values and lower temperatures at station 9454.

Section C, west of station 9437, exhibits water characteristics much less saline, but not quite as cold as the waters to the north in section G. Local warming, and some mixing of water from the east, can account for the elevation in temperatures, however, no water from the north or east can contribute the low salinity values found in section C. Section D does not contain these low values of salinity either, but they are found in section D'. This section, just to the west of Cape Chidley, seems to be the source of the low salinity waters of section C even though no good continuity of low salinity water can be shown to connect them. As discussed in a previous section, tidal fluctuations, mixing and improper timing of the survey ship in transiting section D probably accounts for the lack of continuity of the water masses.

Section B, to the south, shows low salinity and slightly warmer water. Warming would be expected here as the colder water passed south into shallower shelf areas.

The circulation concepts postulated from the dynamic height and the isentropic charts appear to be borne out by tracing the flow patterns using T-S relationships.

TEMPERATURE TIME STUDY

Presented in figure 18 is a time-series study of the temperature structure of the water in the entrance to Hudson Strait. The location was in the vicinity of station number 9452, about 8 miles north of the islands off Cape Chidley. An attempt was made to observe the cold, low salinity water, moving eastward out of the strait from its source southwest of Cape Chidley. Unfortunately this area turned out to be an area of low geostrophic current. Radar was used to keep the ship's position fixed and drift plots of the vessels were used to determine the tidal current changes. Figure 18 shows the electronic bathythermograph (ELBT) records obtained in this location along with ELBT records obtained both inside the strait, station 9461, section D' and outside the strait, stations 9444, 9443, section C. Station 9461 is located within the cold, low salinity water mass believed to be the source of the characteristic Labrador Current.

The arrival of the colder water, at least as cold as found in quantity in section C, stations 9443 and 9444, can be seen in figure 18. This arrival appears nicely timed with the end of the observed ebb current. The temperature structure shows the increase and decrease in the amount of cold water moving through the strait to be obviously connected with the tidal current as hypothesized previously. The failure to obtain a Nansen cast at the time of the arrival of this cold water prevents the proof of lowered salinity of this water, however, from the other evidences presented this is a logical assumption.

MEAN SALINITY DISTRIBUTIONS

One of the more revealing analyzations of the data is presented in figure 19. Shown here is the mean salinity of the southward moving water within the defined characteristics of less than 2° C. and 34.3‰. These mean salinities were obtained by using the values of the salt transport and the volume flow in the following equation:

$$S^0_{/oo} = \frac{M_s}{\bar{V}\rho}$$

where:

M_s = salt transport

\bar{V} = volume flow

ρ = density of sea water

The mean salinities of the water exchanged through the entrance of Hudson Strait were computed for both directions of flow because of the large changes in the salt concentration and flow patterns across the entrance.

The northernmost section of figure 19, section G, shows a 33.37‰ mean salinity for the southward flowing Baffin Land Current. Further to the south, this current appears to shed a lower salinity filament which flows into Hudson Strait, north of Resolution Island through section E. The source of this lower salinity filament is the inshore or coastal portion of the Baffin Land Current. The salinity of the section extending east of Resolution Island, section F, is higher than the Baffin Land Current in section G to the north. This increase in salinity is the result of both the loss of the inshore filament flowing through section E, and the intrusion of more saline water from the western Labrador Sea.

Directly to the south of section F, section C exhibits a mean salinity considerably lower than any

of the sections to the north. This indicates that a supply of less saline water is being introduced into the circulation of the area. The eastern approaches to this section are eliminated as the source due to the higher salinity of the Labrador Sea. The northern approaches obviously do not contain any significant quantities of low-salinity water. Only the waters outflowing from Hudson Strait are comparable in mean salinities with the waters of section C and section B further to the south. A clear pattern appears in this mean salinity distribution. High-salinity water from the north appears to turn into Hudson Strait, in the northern half, while lower salinity water is put into the system from Hudson Strait in the southern half.

Campbell (1958) found the circulation in Hudson Strait to be westward along the northern coast and eastward along the southern coast. He also found a recurving and a mixing of the water flowing along the northern shore, with the water to the south. This occurs roughly midway along the strait and provides the mechanism for altering the high salinity water flowing in, by mixing it with very low salinity water flowing out of Hudson Bay. Campbell (1958) shows the salinity distribution, at 20 meters, for October 1955 and July 1956, in Hudson Strait and the outlet of Hudson Bay. He found a high-salinity inflow into the strait from the east, greater than 33.0‰ and an outflow from Hudson Bay of less than 30.0‰. These would be the necessary concentrations for the mixing and formation of the mean salinities observed flowing eastward through the entrance of Hudson Strait. Contributions from other sources in the Hudson Bay, Hudson Strait area are also cited by Campbell. Their existence eliminates any simplified or unique mixing ratios between Baffin Land Current water and the resident water of Hudson Bay. Campbell shows the area of recurvature of the impouring Baffin Land Current and subsequent mixing with the eastward moving water of Hudson Strait, to be east of the major, resident water sources. The sum total of the low salinity contributions from Hudson Bay and Foxe Channel located just north of Hudson Bay, form the major water masses which combine with the inflowing Baffin Current, modifying it into a characteristic water mass. Thus the circulation system in Hudson Strait appears to absorb the high salinity water, mix it with very low salinity water, and eject this mixture as the char-

acteristic low salinity water which forms the shelf portion of the Labrador Current.

VOLUME FLOW

Figure 20 presents the summarized volume flow and salt transport values, in each direction, for the defined water mass. Presented also are the net transports. The question of the validity of the dynamic height calculations was raised in a previous section. The limitations of the dynamic method are carried over into the volume flow and salt transport calculations because they are based on the dynamic heights. The areas bounded by sections G, E, F, and F, D, C should fulfill the requirements of conservation of mass. That is to say, the volume of water and salt flow into a particular closed area, should equal the volume flowing out. The particular area defined above, and shown in figure 20 are bounded either by the sections listed, land masses, or the Labrador Sea which falls outside the defined water mass characteristics of less than 2° C. and 34.3‰.

The sections of G, E, and F, the Baffin Island coast, and the 2° C. isotherm, shown in figure 20, define a closed area which should fulfill the requirements of mass conservation. First looking at the net volume flow values of figure 20.

Section G, net south: $1.85 \times 10^6 \text{ m}^3/\text{sec}$

Section E, net west: $\frac{-0.59 \times 10^6 \text{ m}^3/\text{sec}}{1.26 \times 10^6 \text{ m}^3/\text{sec}}$

This figure compares with net volume transport south through section F of $1.07 \times 10^6 \text{ m}^3/\text{sec}$. Repeating these computations for the salt transport:

Section G, net south: $638.0 \times 10^8 \text{ gms/sec}$

Section E, net east: $\frac{-198.9 \times 10^8 \text{ gms/sec}}{439.1 \times 10^8 \text{ gms/sec}}$

This compares with the net salt transport south through section F of $371.5 \times 10^8 \text{ gms/sec}$. These in-and-out figures agree within 15 percent for both volume and salt transport.

Extending these comparisons to the area south of Resolution Island bounded by sections F, D, and C and the 2° C. isotherm to the east, the following calculations are made:

Section F, net south: $1.07 \times 10^6 \text{ m}^3/\text{sec}$

Section D, net east: $\frac{+2.23 \times 10^6 \text{ m}^3/\text{sec}}{3.30 \times 10^6 \text{ m}^3/\text{sec}}$

Comparing this figure with the flow south through section C, the value of $3.57 \times 10^6 \text{ m}^3/\text{sec}$

can be observed in figure 20. Again repeating for the salt transport :

$$\begin{aligned} \text{Section F, net south : } & 371.5 \times 10^8 \text{ gms/sec} \\ \text{Section D, net east : } & \frac{+731.1 \times 10^8 \text{ gms/sec}}{1102.6 \times 10^8 \text{ gms/sec}} \end{aligned}$$

The outflow south from this area through section C shows a salt transport of 1198.2×10^8 gms/sec. In this area, the in-and-out figures of the volume and salt transport agree within 8 percent.

The relatively close agreement of the flow figures, to and from these bounded areas supports the circulation and flow computations deduced from the dynamic heights. It reaffirms the validity of the dynamic method, particularly in shallow water. A 10 percent accuracy is as good as can be expected in view of the great number of assumptions, technique errors, and nonmass related flow forces. It is singularly reassuring, if not surprising, that the percentage agreement shown above is as close as it is.

The water exchange through the Hudson Strait entrance, north and south of Resolution Island shows a net flow, to the east, of $1.64 \times 10^6 \text{ m}^3/\text{sec}$. This volume flowout, accounts for almost 50 percent of the net flow to the south through section C. As pointed out in the previous section, high-salinity water flows into Hudson Strait and is mixed, midway up the strait, with low-salinity water moving out of the Hudson Bay, Foxe Channel area. The mean salinity of the net westward water flow into the Hudson Strait entrance is 33.36‰ and the mean salinity of the net outflow is 32.72‰. A simple mixing calculation will show the required salinity of the mixing constituent that combines with the inpouring Baffin Land Current water, resulting in the characteristic cold, low salinity water of the shelf portion of the Labrador Current. Referring to figure 20, across the entrance to Hudson Strait, the following equation is applied :

$$V_t M_t = V_1 M_1 + V_2 M_2$$

where

- V_t = total volume flowout, $4.78 \times 10^6 \text{ m}^3/\text{sec}$
- M_t = mean salinity out, 32.72‰
- V_1 = volume flow in, $3.14 \times 10^6 \text{ m}^3/\text{sec}$
- M_1 = mean salinity in, 33.36‰
- V_2 = volume flow of mixing constituent, $1.64 \times 10^6 \text{ m}^3/\text{sec}$
- M_2 = mean salinity of mixing constituent

Solving the above equation results in a value for M_2 of 31.49‰. This value falls very nicely within the approximate limits of the salinities of the water masses available within Hudson Strait, discussed in two previous sections, which undoubtedly combine and form the mixing constituent for subsequent combination with the Baffin Land Current water.

The volume flow of section B is quite low compared to that through section C. The mean salinity of sections B and C are quite comparable, however the volume flow is only half that of C. There are several possible explanations for this disagreement :

First, the depth of section C is greater by at least 100 meters than section B. If it is assumed that the gradient pressure force of section C is acting along prescribed geostrophic principles, the strong flow south, induced in section C, is forced through section B, resulting in a swift barotropic flow and not detectable by an examination of the mass distribution.

Second, the situation may exist in section C, where the outflowing tidal pulses, speculated on previously, cause a pileup of the light water. This is indicated by the dynamic height contours which intersect the coast of Labrador. In this situation, the time lag of the adjustment period is such that this mass or slug of light water is at least a semi-permanent feature in the area. Therefore as found, the geostrophic movement south is slow through section B, but over a given time period is sufficient to carry off the periodic tidal buildup of the water emanating from Hudson Strait at section C. This concept would still allow the use of the dynamic method for examining the pressure-mass distribution flow tendencies. One supporting point for this argument is that the total outflow from Hudson Strait, $1.64 \times 10^6 \text{ m}^3/\text{sec}$, is only slightly less than the $1.68 \times 10^6 \text{ m}^3/\text{sec}$ net southward flow through section B. The limited southward flow from section F, which appears to be continuous through section C and B has properties within the defined water mass but on the warm, higher salinity end. This can be seen from the T-S curves of figures 12 and 14. Being warmer and saltier, and in proximity with the boundary Labrador Sea water, makes it more susceptible to receiving heat and salt, as it moves south thereby removing good portions of its volume flow from the defined water mass analyzed prior to its arrival at section B.

No complete explanation can be given at this time. It is hoped that a similar cruise being undertaken in 1966 will clarify the situation.

Section A, well to the south and not shown on figure 20, had a volume flow $1.28 \times 10^6 \text{ m}^3/\text{sec}$ and a mean salinity 33.53‰. This section is sufficiently far to the south of section B to permit lateral entrainment of the Labrador Sea water from the east which not only reduces the amount of the defined water mass but also causes a salt and heat increase. This would make these volume and salt figures noncomparable with the values found in the north.

Smith (1937) did a limited amount of quantitative work in the entrance to Hudson Strait based on the 4 stations he obtained there. He estimated the net discharge to be $1.0 \times 10^6 \text{ m}^3/\text{sec}$, but points up the probability of the seasonal and yearly changes that occur. His calculations lacked data in the strait north of Resolution Island.

Quantitative flow work in Hudson Strait was performed by both Campbell (1958) and Farquharson and Sauer (1960). Campbell determined the summer rate of the eastward current in Hudson Strait to be about 17 kilometers per day. The work done by Farquharson tends to support this finding through the use of current meters. The data from the 1965 expedition show a 49 kilometer per day current flowing east through the entrance across a 19-mile wide group of stations. Campbell (1958) also made transport calculations of this eastward flowing current within the strait. He shows a net eastward flow of $0.3 \times 10^6 \text{ m}^3/\text{sec}$. Calculations based on the 1965 expedition indicates a net eastward transport of $1.64 \times 10^6 \text{ m}^3/\text{sec}$, considerably higher than found by Campbell (1958).

The explanation of the discrepancies of the resulting figures presented herein and those arrived at by Campbell (1958) is found in the differences of location time, number of data points, and method of dynamic calculations. Campbell's calculations for July were made well within Hudson Strait and not in the restrictive entrance which would tend to increase the current velocities. His volume flow values were arrived at for a location west of Ungava Bay which undoubtedly contributes a good deal of water to the net eastward flow. The station location used by Campbell left large gaps between the end of his sections and the

coast. He speculates that as much of the flow could be passing through this gap as passes through the entire calculated section. Furthermore, his usage of a variable depth of no motion within the strait limited by a maximum of about 350 meters, would not result in comparable computations with those made using a 1000-meter depth of no motion. In addition to the points above, the different years in which the data was obtained could account for the incomparability alone.

FUTURE WORK

Another expedition is planned during July and August of 1966 to the Hudson Strait area. Survey work will be performed both inside and outside the entrance of the strait in an effort to tie the circulation of both areas together. In addition, parachute drogues will be used, during several tidal cycles, in order to obtain direct measurements of the net flow through the strait. Multiple section occupations over several tidal cycles will also be attempted in order to verify the constancy of the distribution of mass regardless of the tidal current fluctuation.

SUMMARY

The circulation of the Baffin Land Current is into Hudson Strait, north and south of Resolution Island. No large volume flow appears to be continuous between the Baffin Land Current and the Labrador Current. To the east of Resolution Island low velocity currents flow in a general southerly direction. The water flowing into Hudson Strait has a mean salinity 0.64‰ higher than the mean salinity of the water flowing out of the strait. It is further indicated that the characteristic low salinity water of the Labrador Current emanates directly out of the strait and is the result of the mixing, within Hudson Strait, between very low-salinity resident waters and the inflowing Baffin Land Current. Calculations show that $1.64 \times 10^6 \text{ m}^3/\text{sec}$ outflow from Hudson Strait is contributed to the Labrador Current. Calculations further show that this net outflow forms at least 50 percent of the Labrador Current flowing south of Hudson Strait.

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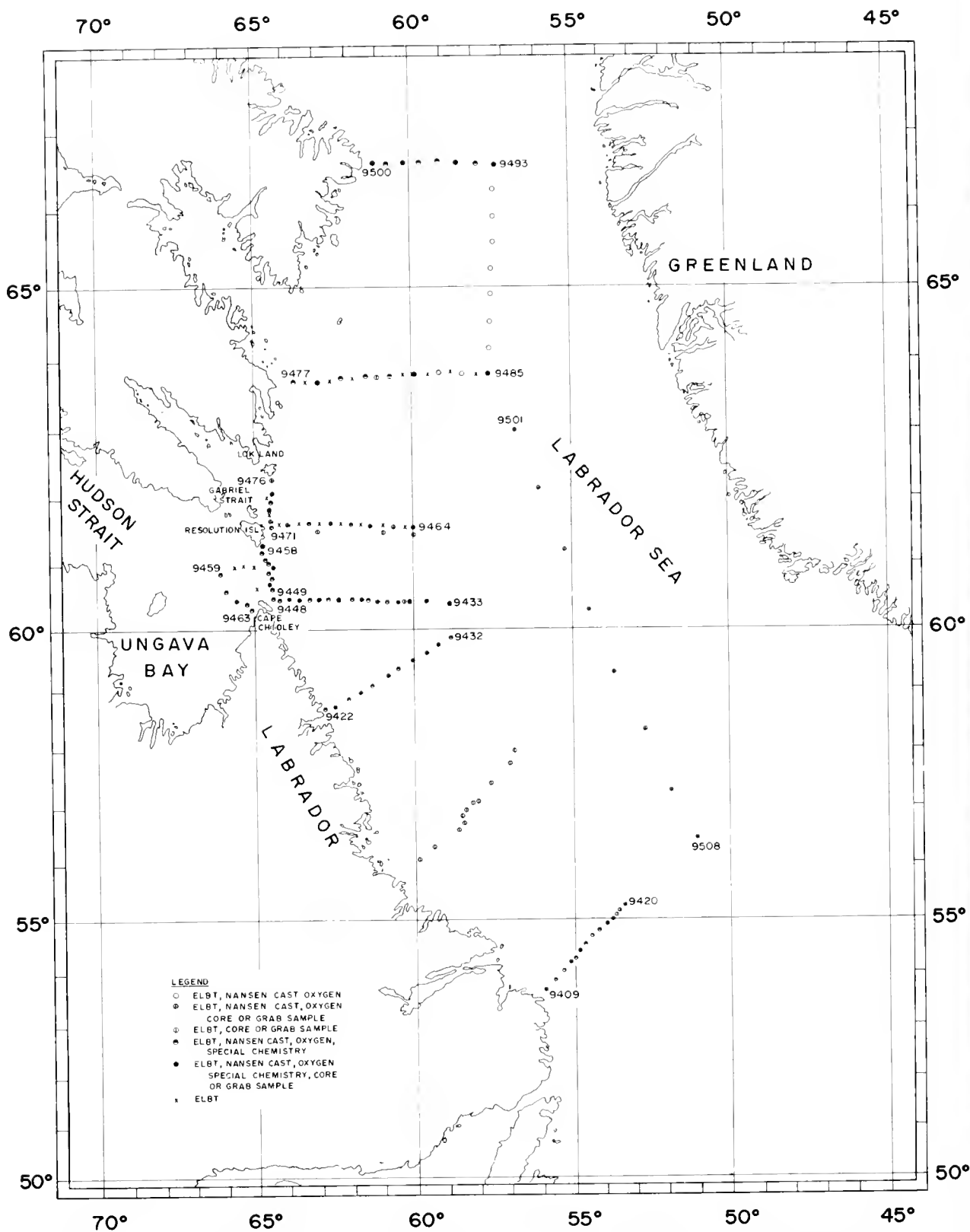


Figure 1. Station array and types of sampling accomplished at each location during the Labrador Current Expedition, July–August 1965.

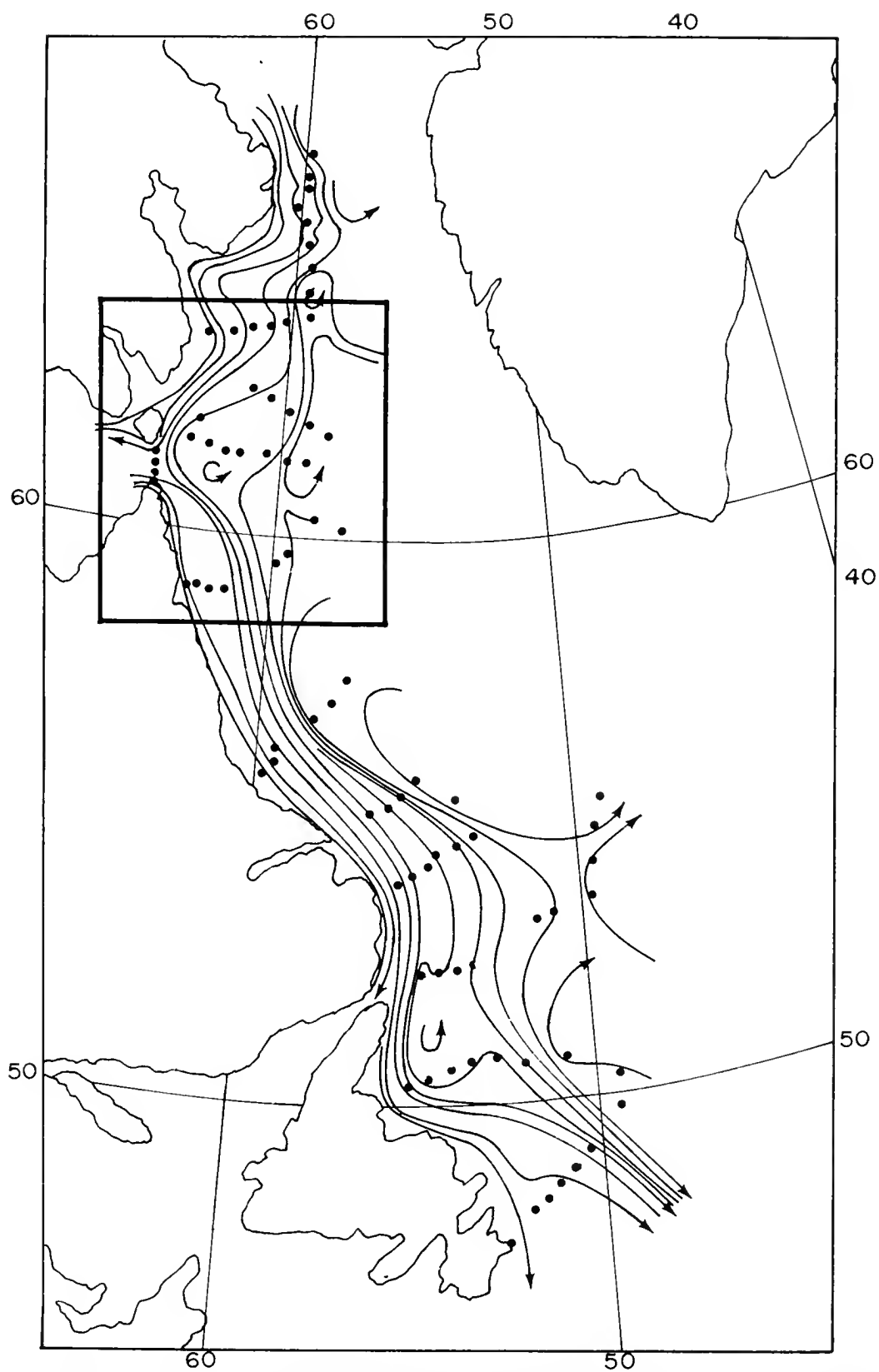


Figure 2. Station array and dynamic height streamlines obtained by Smith (1937) from the CGC MARION Expedition.

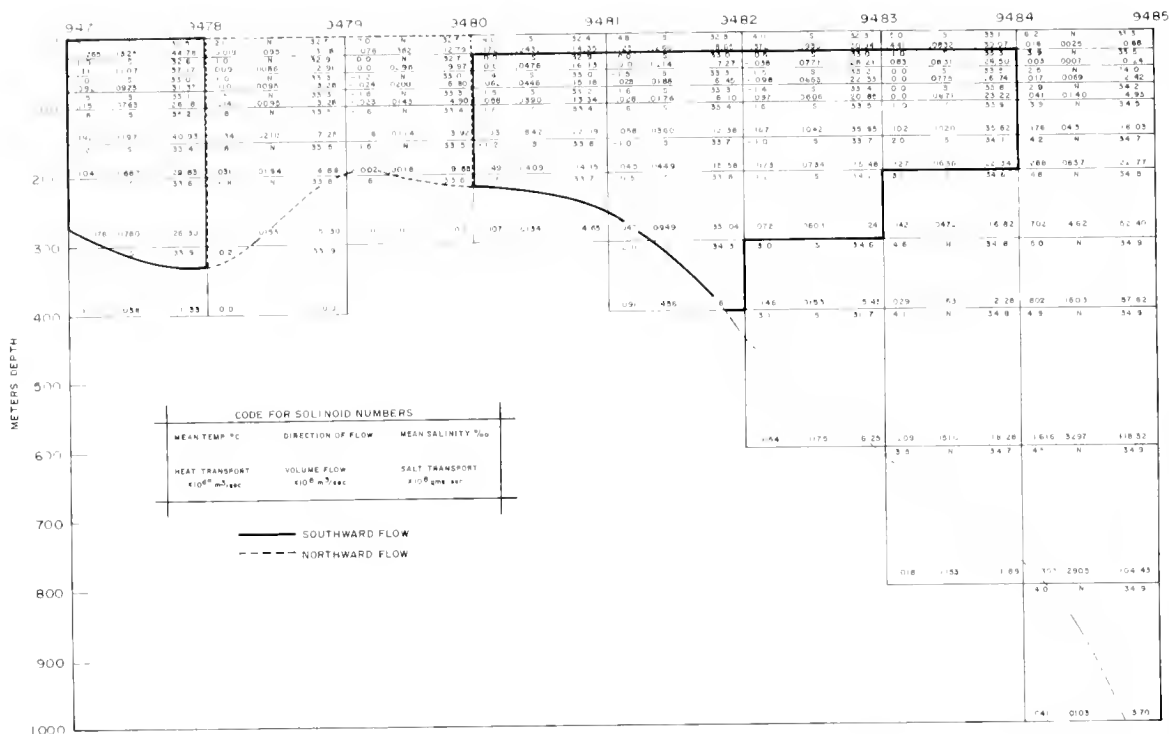


Figure 3. Solenoid division of section across Baffin Land Current, located off Loks Land, as used in the volume, mass, and heat transport calculations.

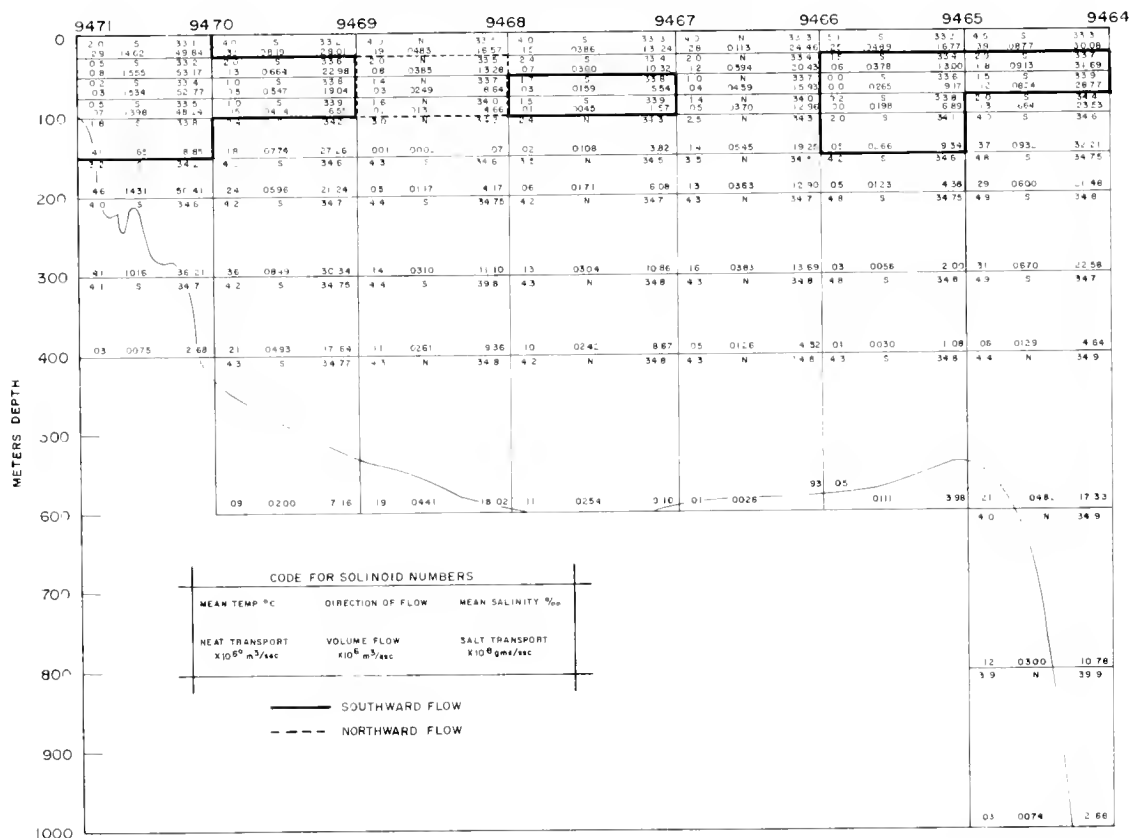


Figure 4. Solenoid division of section to the east of Resolution Island as used in the volume, mass, and heat transport calculations.

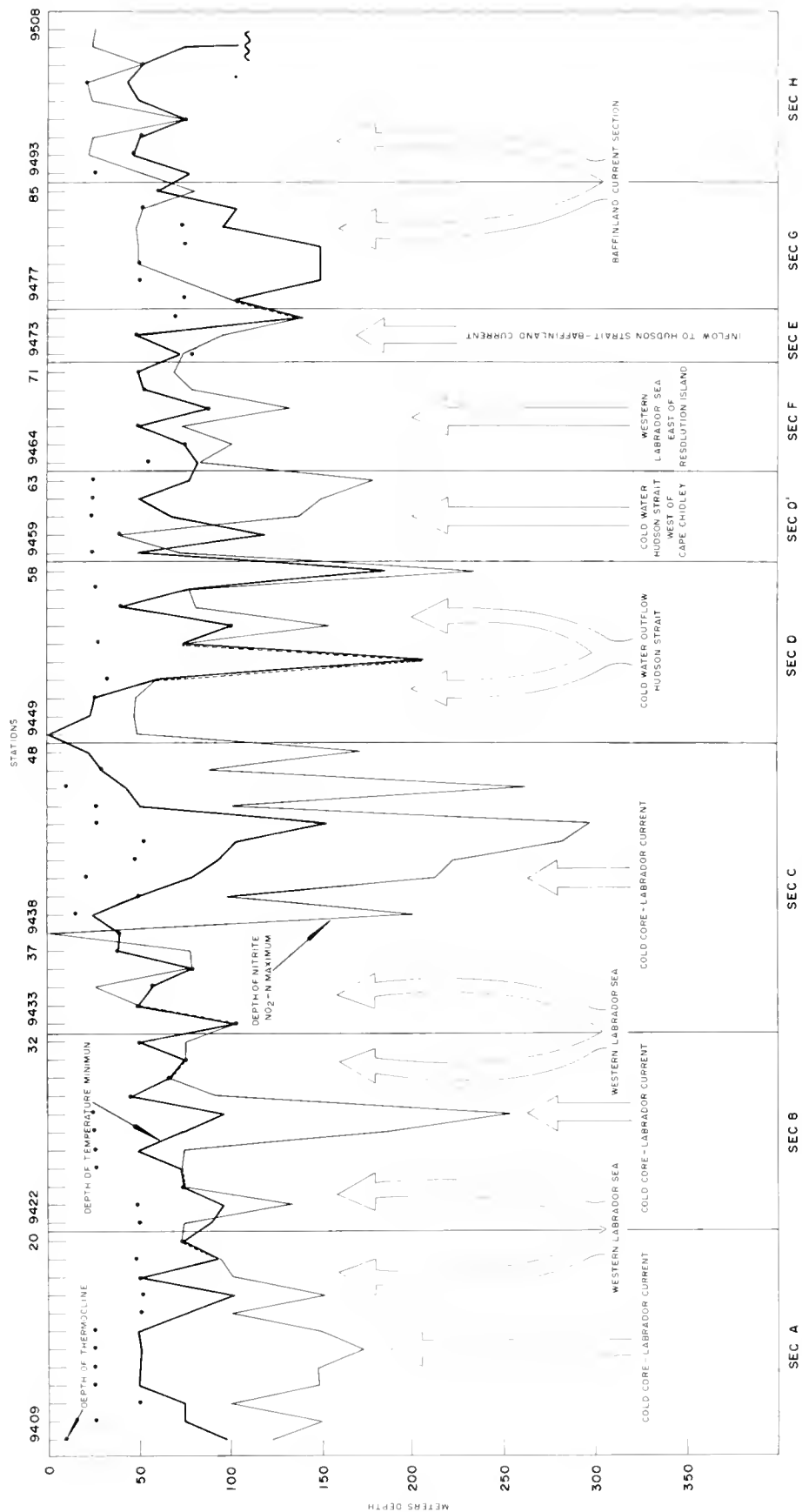


Figure 5. Composite station plot showing the depth of the temperature minimum, depth of the thermocline, and the depth of the nitrite (NO_2-N) maximum.

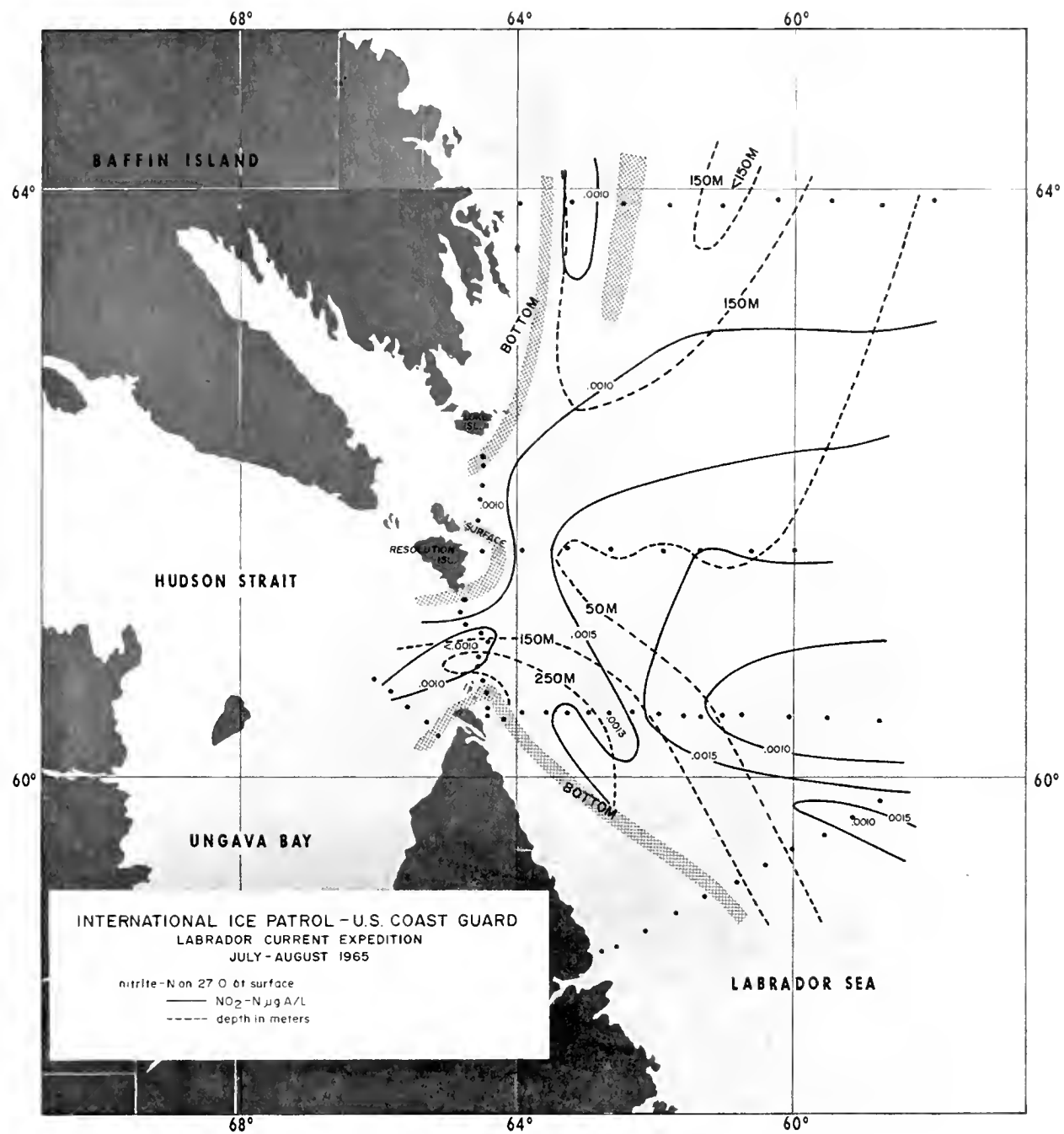


Figure 7. Depth plot of the 27.0 sigma-t surface showing the contours of the nitrite ($\text{NO}_2\text{-N}$) distribution shown also are the surface intersections with the sea surface and bottom.

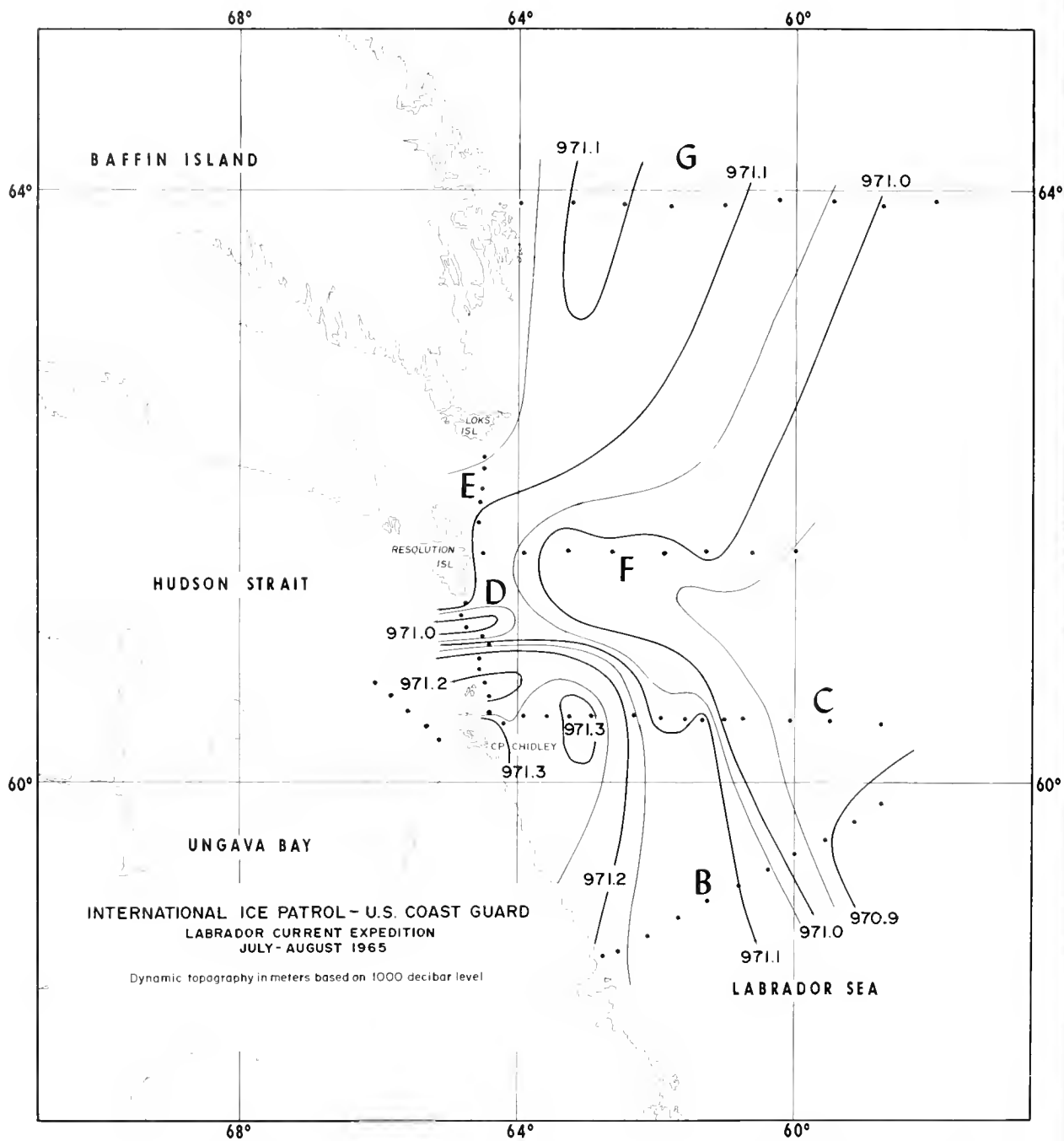


Figure 8. Surface dynamic height chart of the survey area, in dynamic meters based on a 1000-decibar level of no motion.

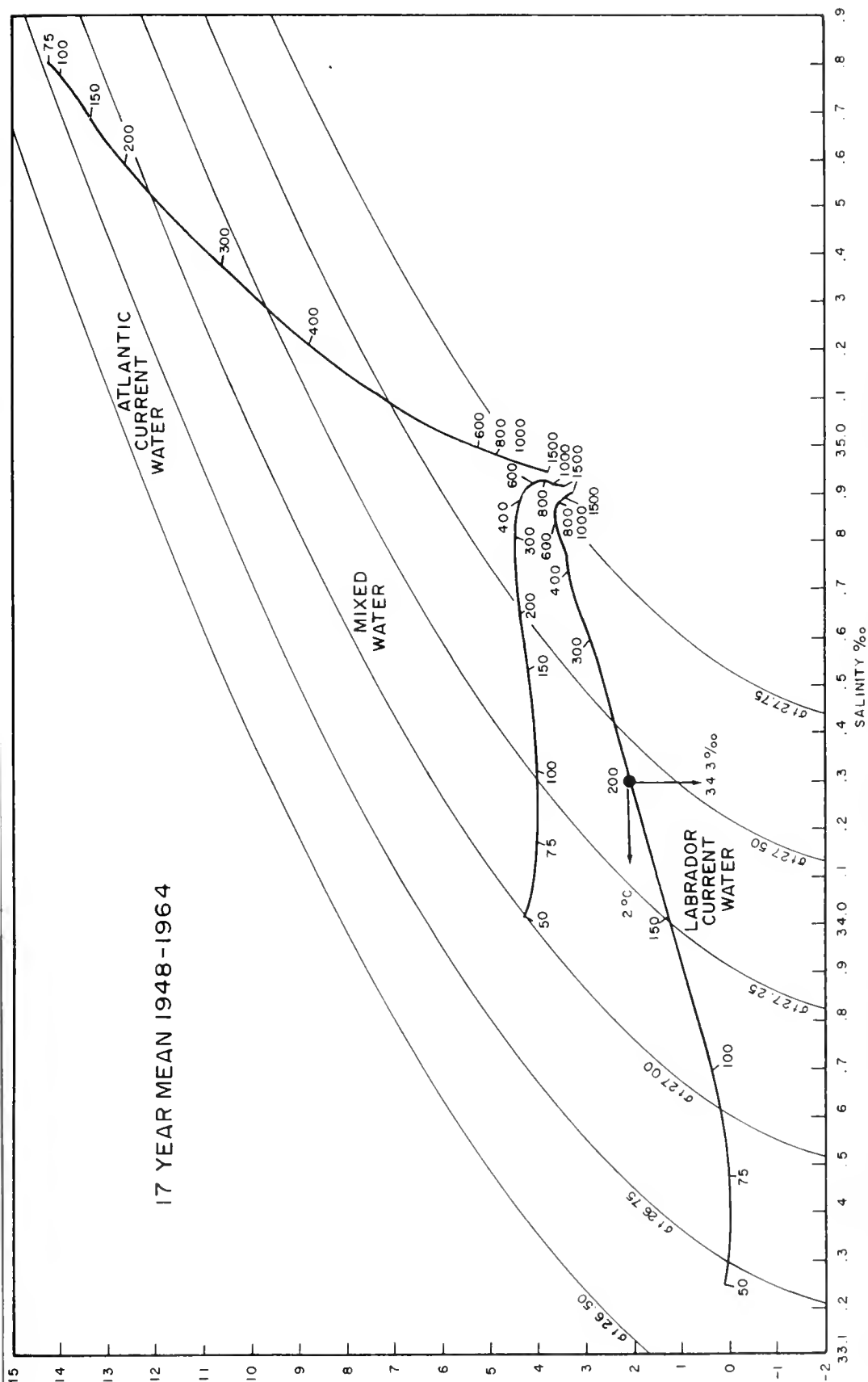


Figure 9. Temperature-salinity relationships of the water masses found off the Grand Banks of Newfoundland based on 17 years of data. Limits of the defined water mass are shown.

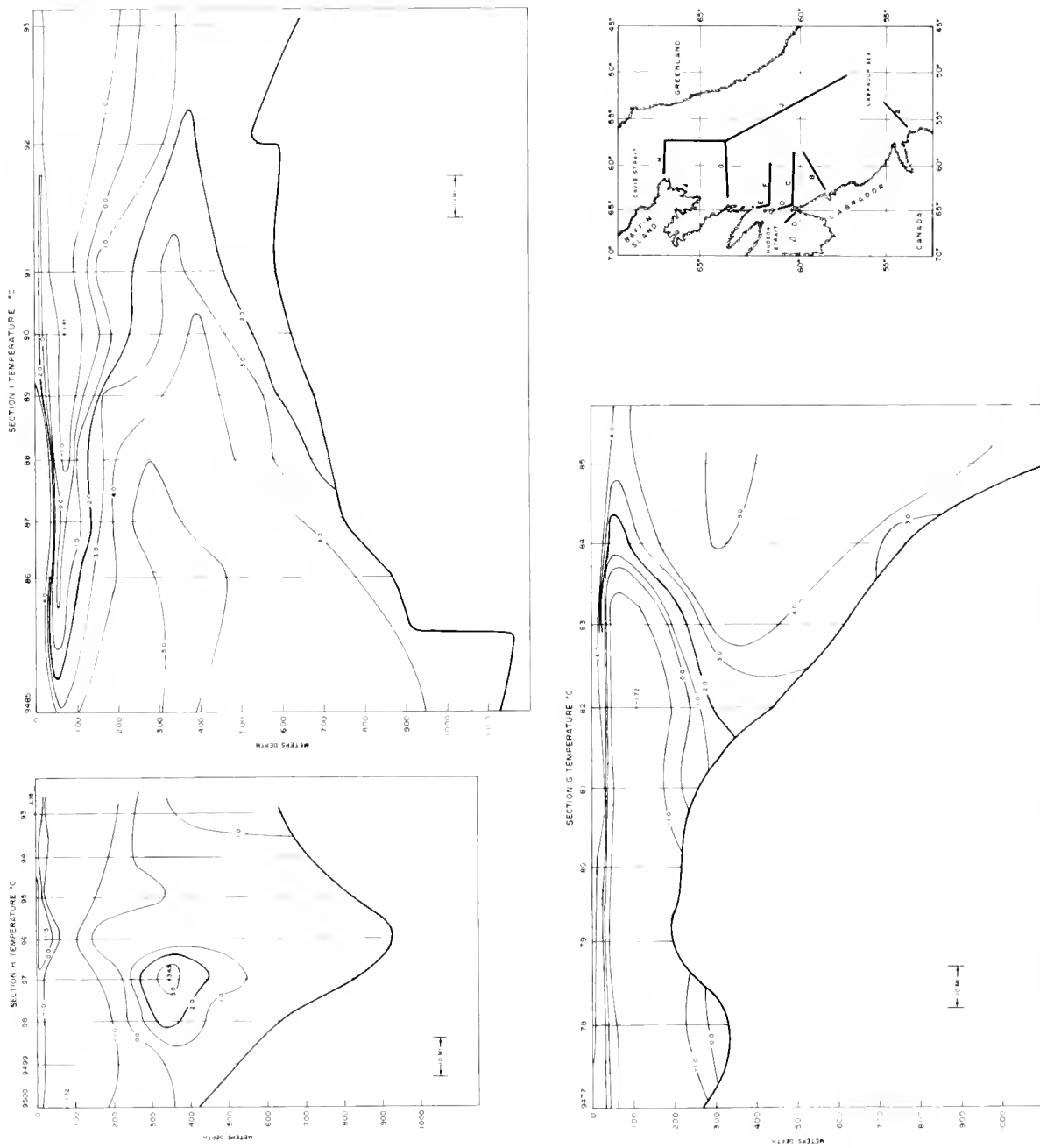


Figure 10. Temperature distribution (°C.) in the sections located in the northern Labrador Sea.

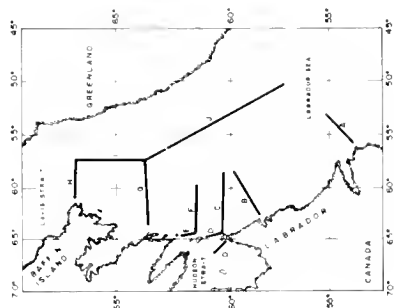


Figure 11. Salinity distribution (‰) in the sections located in the northern Labrador Sea.

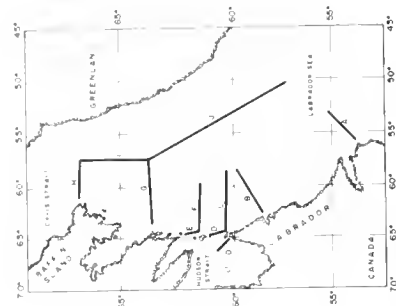
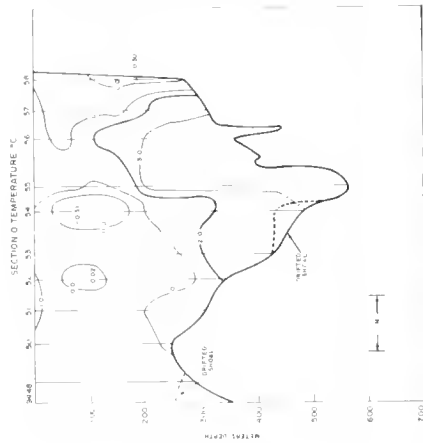
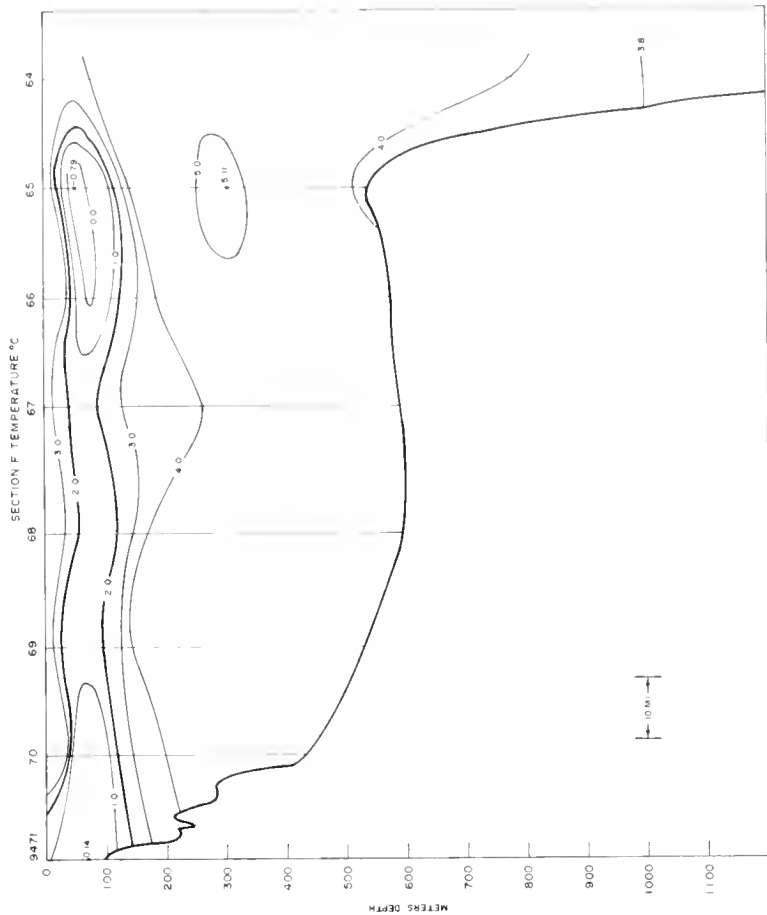
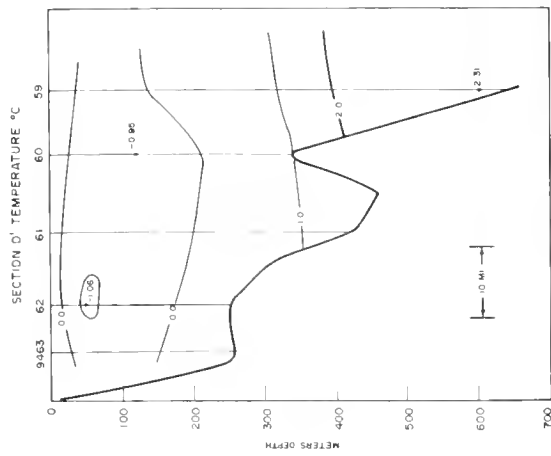
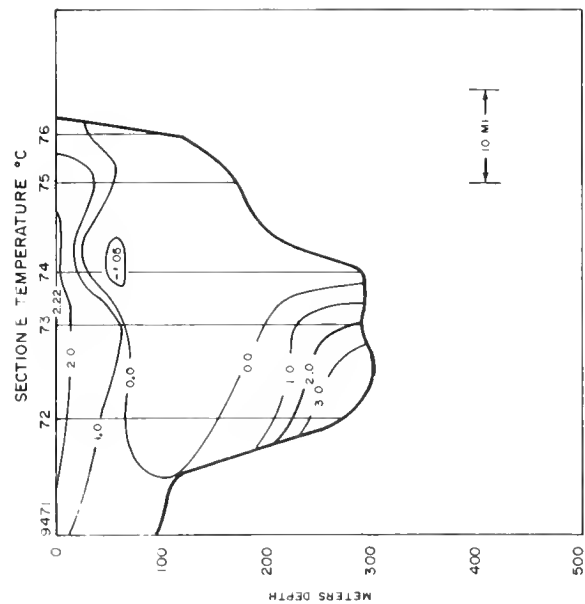


Figure 12 Temperature distribution (°C.) in the sections located in the vicinity of the entrance to Hudson Strait.

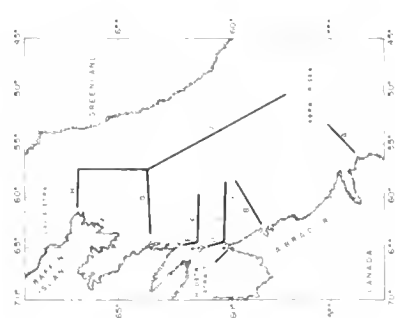
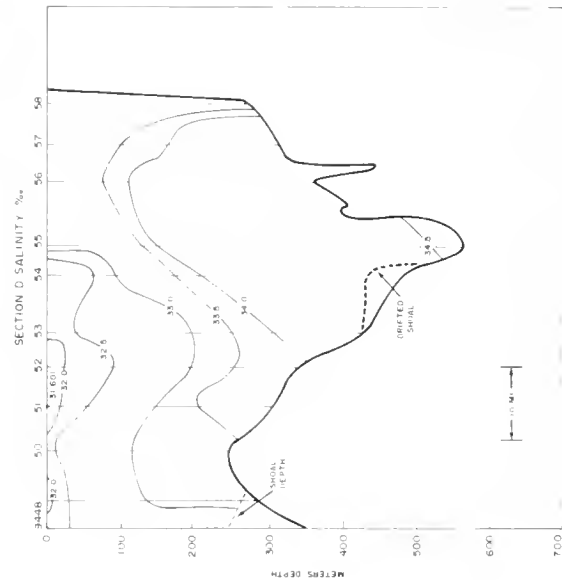
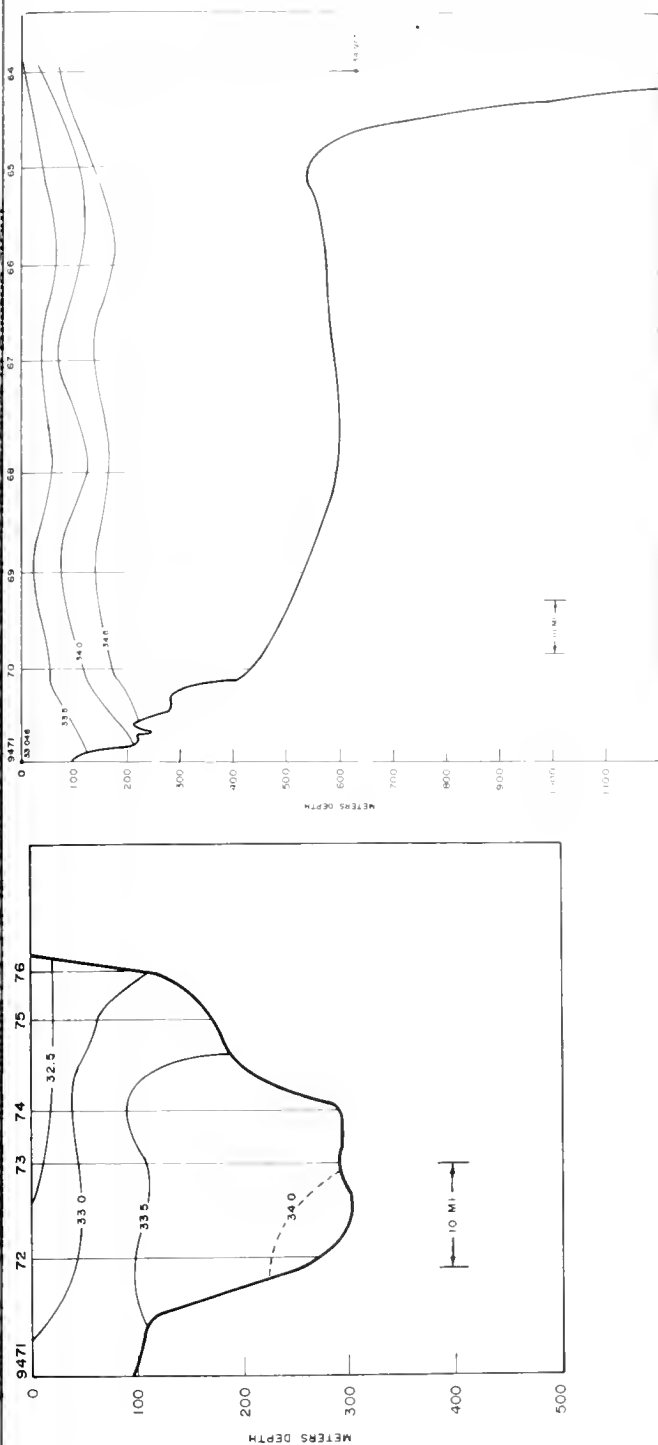
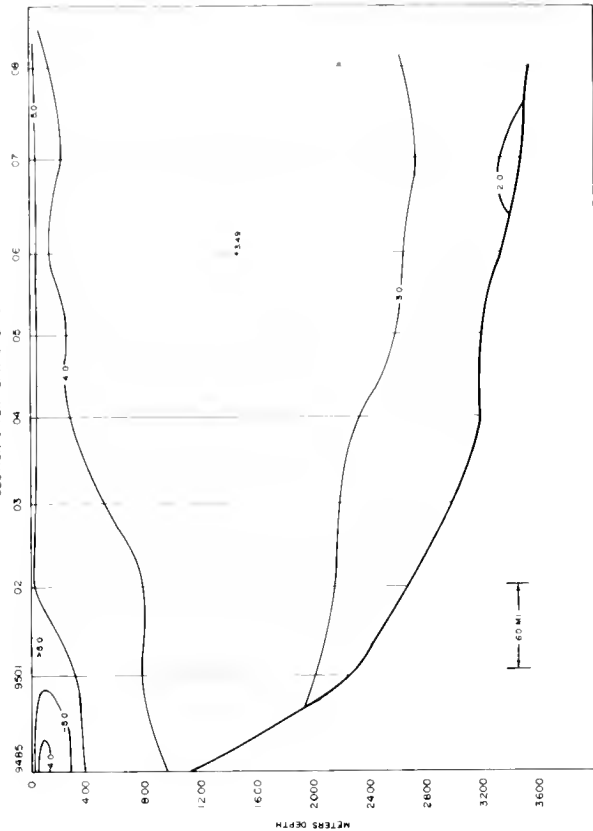
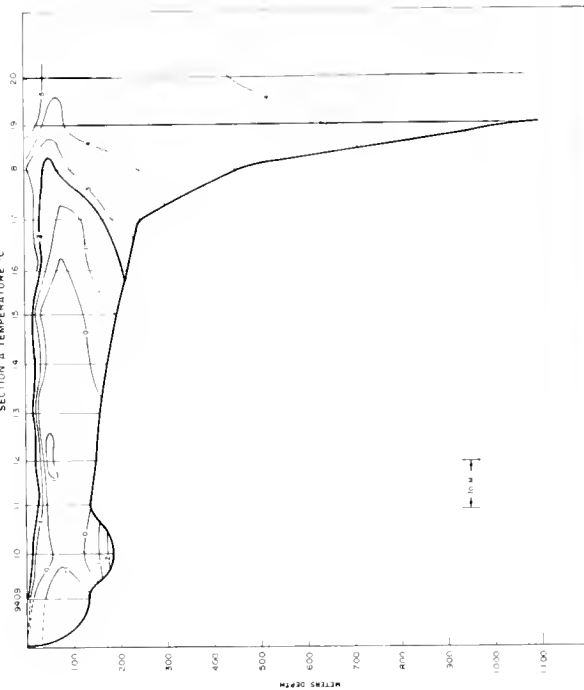


Figure 13. Salinity distribution (‰) in the sections located in the vicinity of the entrance to Hudson Strait.

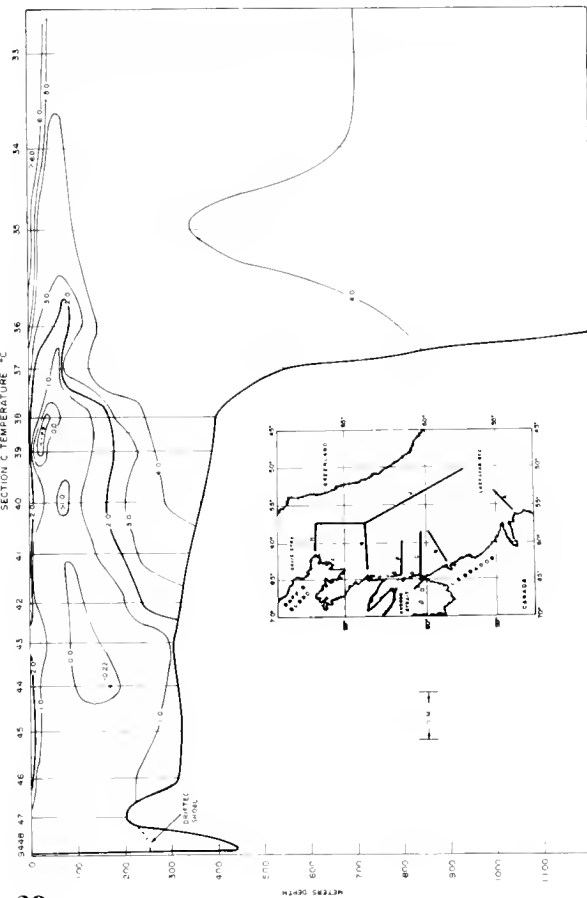
SECTION J TEMPERATURE °C



SECTION A TEMPERATURE °C



SECTION C TEMPERATURE °C



SECTION B TEMPERATURE °C

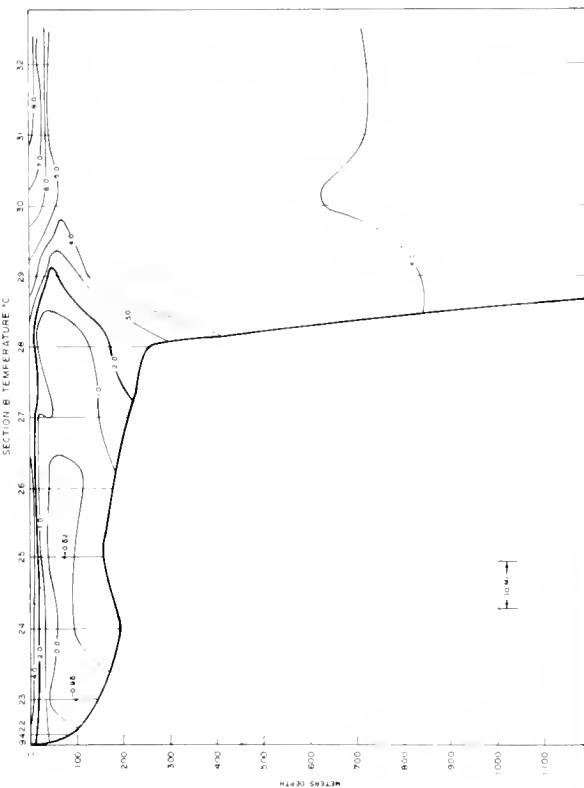




Figure 15. Salinity distribution (‰) in the sections located in the southwestern and central Labrador Sea.

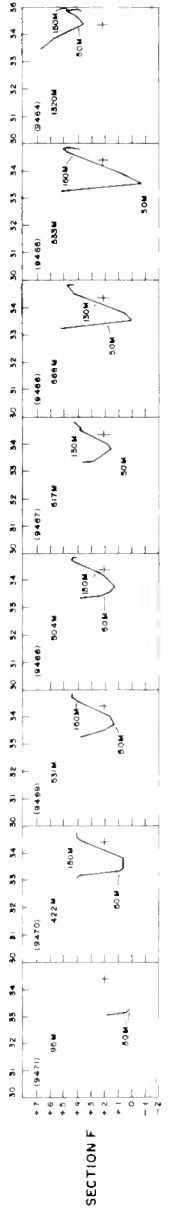
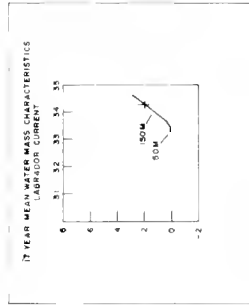
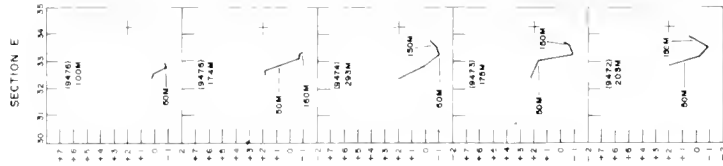
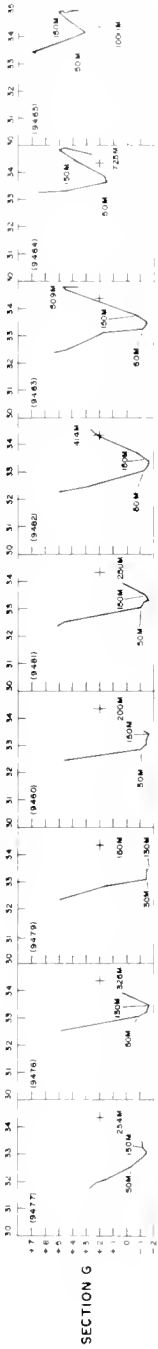


Figure 16. Temperature-salinity diagrams for sections G, F, and I obtained in the vicinity of the entrance of Hudson Strait.

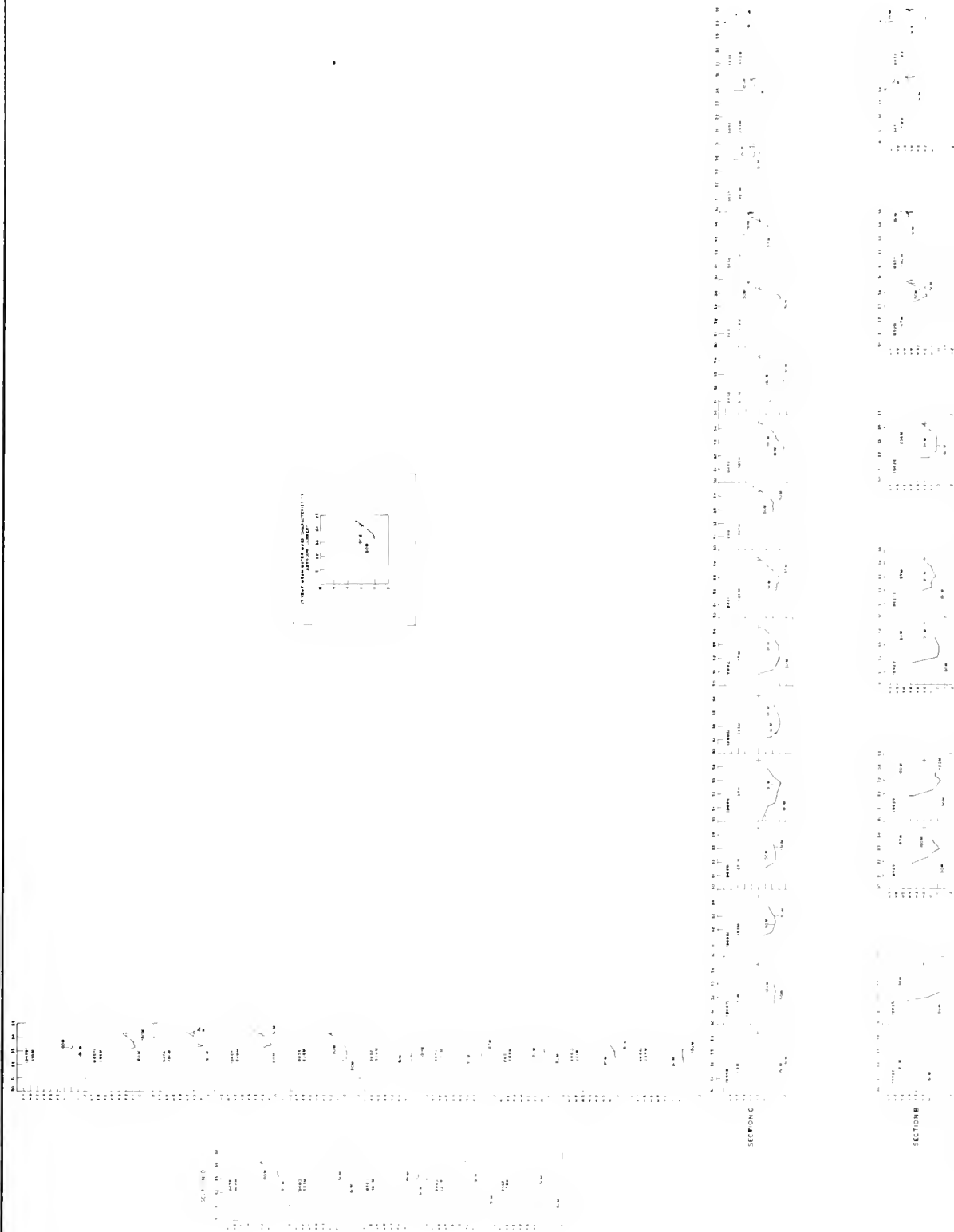


Figure 17. Temperature-salinity diagrams for sections D', D, C, and B obtained in the vicinity of the entrance of Hudson Strait.

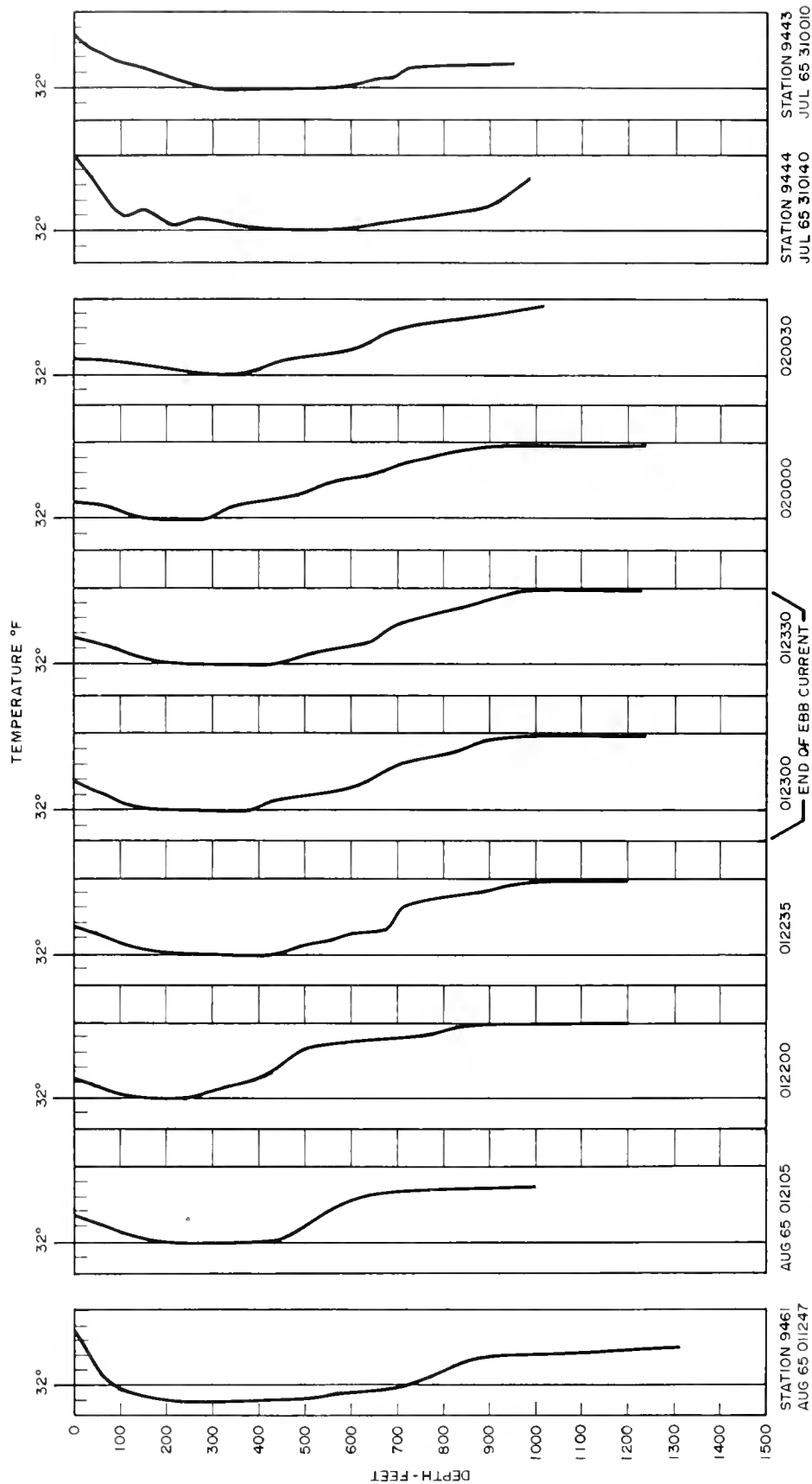


Figure 18. Electronic bathythermograph records from station 9461, section D'; 9443, 9444, section C; and a fixed location 8 miles north of Cape Chidley in the entrance to Hudson Strait.

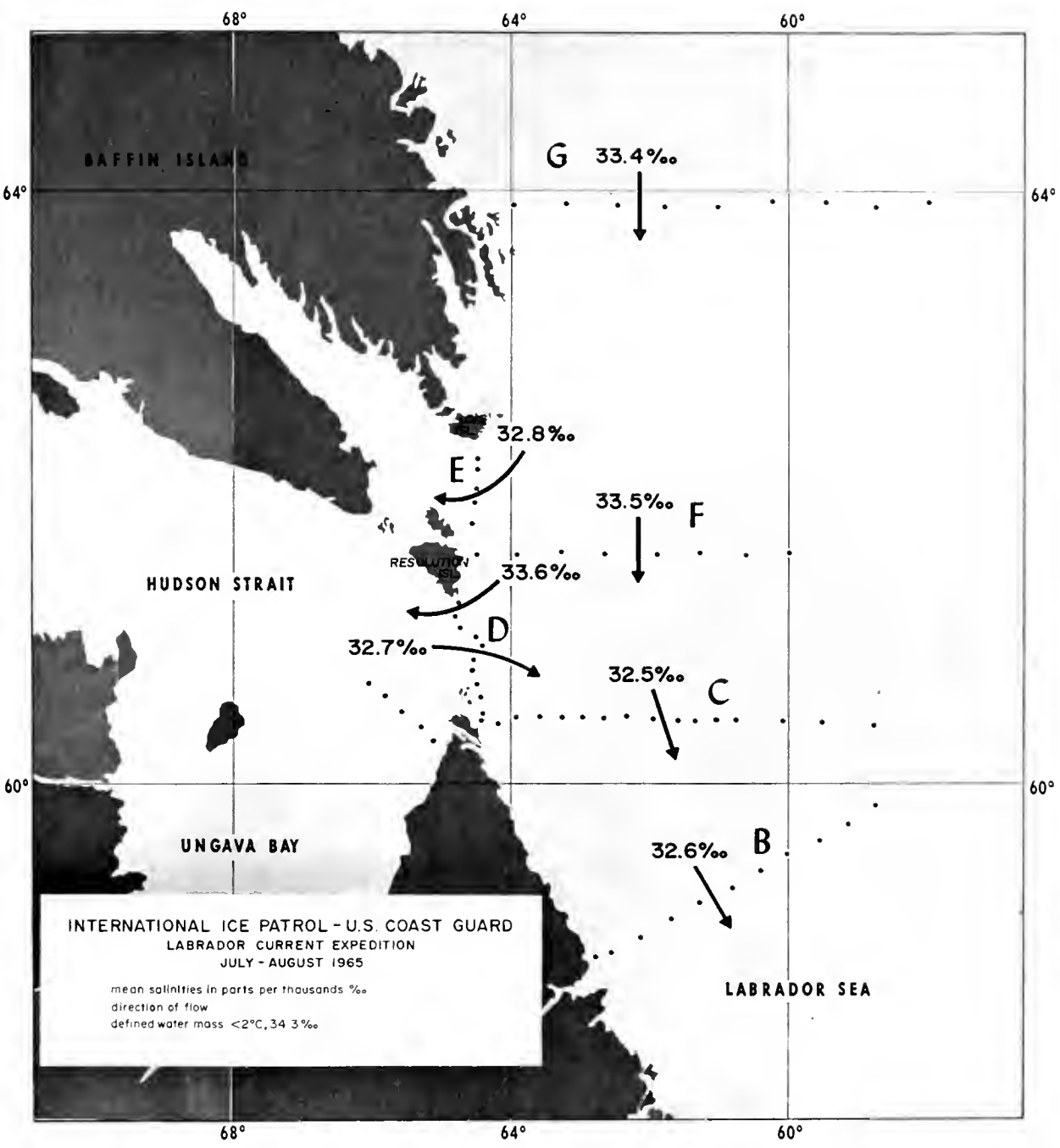


Figure 19. Mean salinity values in ‰ of the water flowing through the sections obtained in the vicinity of the entrance of Hudson Strait.

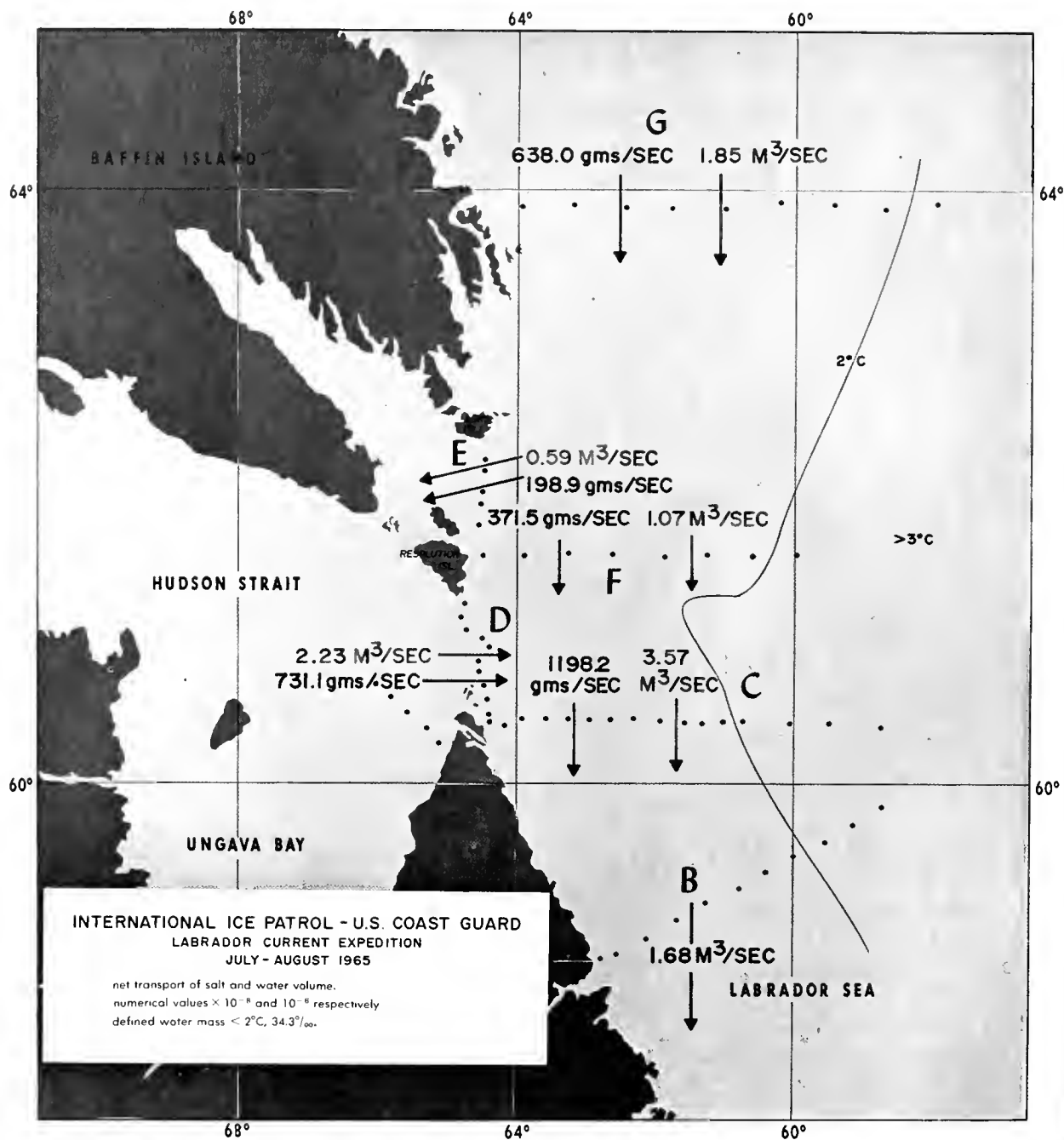


Figure 20. Net volume flow and salt transport through the sections obtained in the vicinity of the entrance of Hudson Strait.

Nutrient Distribution Along the Labrador and Baffin Island Coast, 1965

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Interest in the oceanographic conditions of the Labrador Sea has greatly intensified in recent years, as the important relationship of this area to the western North Atlantic has been demonstrated. For many years the standard section from South Wolf Island, Labrador to Cape Farewell, Greenland has been occupied by the U.S. Coast Guard in a post season cruise by the Ice Patrol. Analysis of this section has shown the presence of coastal currents near Labrador with markedly different characteristics from the offshore water masses. The nutrient chemistry of this standard section has been examined by the present authors in recent years and show a similar abrupt transition between the coastal and offshore conditions. While recent Soviet research reports (VNIRO-PINRO, 1960; 1962) have given information on the chemistry and biology of the region south of the standard section along the Newfoundland coast and banks, details on the coastal conditions in northern Labrador and Baffin Island have been lacking. Accordingly, the 1965 post season Ice Patrol survey was planned to provide data on coastal sections from South Wolf Island, Labrador to the margin of the Baffin Sea basin. The report on the nutrient chemistry for the coastal waters surveyed which is given here greatly augments the available observations, especially in the Hudson Strait and Ungava Bay area, which has been previously little studied (Dunbar, 1951).

METHODS

The analytical techniques have been given in previous reports, especially McGill and Corwin (1965) where references to individual methods may be found. Frozen samples collected during the Ice Patrol Post Season Survey were stored until analysis could be undertaken in Woods Hole.

The assistance of John Schilling and Mrs. Juanita Mogardo is again gratefully acknowledged. The nutrient data are published in this volume along with the other observations at each station. Since relatively little detail exists in the contours of these sections due to the greatly restricted depths along the continental shelf, profiles of all the distributions are not given. Only the nitrite-nitrogen profiles are shown and the significance of these is discussed below. The other distribution patterns are described verbally. The locations of the sections mentioned are shown on the inset maps accompanying figures 1 and 2.

DISTRIBUTION OF NUTRIENTS

Inorganic phosphate-phosphorus values near 0.5 $\mu\text{gA}/1$ at the surface along the coast occur throughout the area. In the southern sections, the surface phosphate concentration decreases at the offshore extremity to values near 0.20 $\mu\text{gA}/1$. A concentration of 1.00 $\mu\text{gA}/1$ is reached near a depth of 200 meters in all sections. Along the continental slope in deep water the phosphate level increases to about 1.10 $\mu\text{gA}/1$. Sections A, B, and C—south of Hudson Strait—show a value of about 0.90 $\mu\text{gA}/1$ at 100 meters on the continental shelf. This general pattern also occurs in section D across the mouth of Hudson Strait. The small decline in surface values at stations 9455–9457 (at the northern end of the section) relative to the remainder of the section may possibly indicate the westward-moving inflow to the Hudson Strait. Section D' representing Ungava Bay (see map) has relatively high phosphate concentrations: 1.00 $\mu\text{gA}/1$ occurs near 100 meters and occupies the remainder of the basin except where a near-shore current is suggested at stations 9463. Sections E and F are generally similar to section D. In section G a bubble of phosphate greater than 1.00 $\mu\text{gA}/1$ is found at about 50 meters and this may represent the outflow from Davis Strait in a current moving southwestward toward the coast after exchanges with Baffin

¹ Contribution No. 1838 from the Woods Hole Oceanographic Institution. This work was supported in part by the Office of Naval Research under contract Nonr-2196(00) NR-083-004.

Bay water. Section H is clearly much different from the other sections, being north of the sill at Davis Strait. The increase of nutrient concentrations in deep water below the sill depth is indicated by phosphate values of greater than $1.20 \mu\text{gA}/1$.

Total phosphorus distribution is consistent with the pattern just described for the inorganic phosphate. Values average 0.10 to $0.20 \mu\text{gA}/1$ greater than inorganic readings, especially near the surface and in the areas near shore or over the continental shelf. Section D again suggests an inflow to Hudson Strait with lower total phosphorus values on the northern side and an outflow from Ungava Bay on the southern side having higher values. The high nutrient level at 50 meters in Section G persists. In Baffin Bay (section H) the pattern is extremely complex: The water below sill depth shows a total phosphorus concentration over $1.30 \mu\text{gA}/1$ and near stations 9499 and 9500, on the landward end of the profile, total phosphorus values greater than $1.50 \mu\text{gA}/1$ are found. As in the other sections, the variations in near-surface values found here between individual stations is presumably due to phosphorus in biological combination.

The organic phosphorus is derived as the difference of the observations on total and inorganic concentrations. These values are also reported with the data tables which accompany this volume. Values of organic phosphorus greater than $0.20 \mu\text{gA}/1$ occur at the surface in section A, B, and C and again at G and H. The continental shelf in A, B, and C has organic phosphorus values from 0.10 to $0.20 \mu\text{gA}/1$ while lower tend to be found in the deeper water offshore along the continental slope. Similarly low values are found in section F although at section G the organic phosphorus level increases again. These data are perhaps best handled statistically, as in the following section.

The nitrate-nitrogen distribution in all sections is well stratified. Zero surface values increase to $5.0 \mu\text{gA}/1$ at 50–75 meters and values of $10 \mu\text{gA}/1$ occur by about 200 meters. The offshore deep waters on the continental slope in sections A, B, and C show a continued increase in nitrate concentration to values greater than $15 \mu\text{gA}/1$. Similar high values are found below 300 meters in sections F and I and at station 9485 in section G. Relatively low nitrate concentrations are found in the Hudson Strait and Ungava areas.

Nitrite-nitrogen distribution are reported separately from the values for nitrate concentration.

The nitrite concentrations are also shown in figures 1 and 2. In the stations in the Baffin Bay area, section II, the high nitrite values are found close to the surface. In the other sections, the only statistically significant values are grouped near 100 meters, with the highest values in all cases occurring on the seaward end of the profile, especially in the southern end of the Labrador Sea (fig. 2). Low nitrite concentrations with a very indefinite pattern of distribution, found in the section for Hudson Strait and Ungava Bay (sections D and D', fig. 2), contrast with the strongly emphasized peak concentrations for the Labrador Sea.

The silicate-silicon distribution also shows considerable horizontal stratification from values less than $5 \mu\text{gA}/1$ at the surface to concentrations of about $10 \mu\text{gA}/1$ at 100 meters. Higher values occur in deep offshore water of section A, B, and C. The silicate level on the continental shelf in section C is slightly reduced, which may relate to the low values (less than $10 \mu\text{gA}/1$) found also in section D at the entrance of Hudson Strait. The Ungava Bay area (section D'), on the other hand, shows silicates greater than $10 \mu\text{gA}/1$ below 100 meters. Stratification is well marked in sections F and G, though the high nutrient level in section G recurs in the silicate concentrations at about 100 meters on stations 9479–9482. High silicates, up to values greater than $30 \mu\text{gA}/1$, are found in the deep water of section I. Such values are characteristic of Baffin Bay at the depth below the sill (McGill and Corwin, 1962).

DISCUSSION

Analytical results for the various nutrient determinations from the coastal sections near Labrador and Baffin Island are in good agreement with each other. The nutrient concentrations show a general increase with depth. A simple regression analysis gives ratios by atoms for the relative changes in nutrient concentration in each section, as reported in table I, which also gives the 95 percent confidence intervals as determined in Simpson (1960). The $\Delta N : \Delta P$ ratio is in general agreement with the value of 16:1 which is widely accepted despite the variations in some regions which are discussed by Armstrong (1965). Section D', in Ungava Bay, is the only area of this survey with a marked change from this value. A considerable reduction is found in Ungava Bay—the value obtained is equivalent to winter values

for regions such as Long Island Sound (Riley and Conover, 1956) and New England coastal surface waters (Ketchum et al. 1958).

The $\Delta Si : \Delta P$ ratios in table I are more variable from section to section. The highest ratio occurs in the Baffin Bay waters of section H, where silicate accumulates below sill depth. The value found agrees with our previous observations (Corwin and McGill, 1965). By contrast, a low value is obtained for section F. Without biomass measurements or productivity estimates, this variation in the coastal sections cannot be correlated with any changes in populations, though this is one obvious agent affecting $\Delta Si : \Delta P$ through growth of phytoplankton skeletons and other metabolic changes. Land drainage might augment the local supplies, as in section E where the $\Delta Si : \Delta P$ ratio is slightly increased, but this effect likewise cannot be estimated from available information.

The $\Delta Si : \Delta P$ and $\Delta N : \Delta P$ ratios do not vary consistently together, which adds to the difficulty of interpretation. In data of previous years for the section from South Wolf Island to Cape Farewell, Greenland, which includes the deep water offshore, the $\Delta Si : \Delta N : \Delta P$ has been in good agreement with the theoretical ratio of change in sea water (see McGill and Corwin, 1965). It is probable that biological assimilation in the surface waters near shore acts as a differential agent to alter the ratios selectively, while process of regeneration in deep water of the main Labrador Sea restore the nutrient quantities to solution. In the coastal sections surveyed in 1965 assimilative processes predominate, thus producing the variable ratios given in table I.

TABLE I. Relative changes in concentration among the nutrient elements in coastal sections near Labrador and Baffin Island

Area	ΔSi	ΔN	ΔP
Section:			
I-----	23. 82 \pm 3. 42(87)	16. 40 \pm 3. 16(87)	1
G-----	13. 39 \pm 2. 40(58)	15. 02 \pm 3. 64(58)	1
F-----	9. 27 \pm 0. 80(50)	17. 62 \pm 1. 87(50)	1
E-----	16. 89 \pm 3. 53(26)	15. 95 \pm 7. 21(25)	1
D-----	10. 15 \pm 3. 05(82)	15. 57 \pm 2. 88(82)	1
D'-----	11. 18 \pm 0. 87(52)	9. 45 \pm 1. 75(52)	1
C-----	11. 88 \pm 0. 93(160)	18. 14 \pm 1. 76(159)	1
B-----	10. 87 \pm 1. 40(95)	18. 10 \pm 2. 99(95)	1
A-----	13. 01 \pm 1. 17(106)	17. 31 \pm 1. 89(106)	1

NOTE.—The number of data pairs used in the regression is given in parentheses. Ninety-five percent confidence intervals are calculated from Simpson et al., 1960.

Organic phosphorus distribution is perhaps best represented as a frequency distribution. The statistical parameters resulting from such treatment are given in table II. The mean value given includes observations from all depths on the sec-

TABLE II. Distribution of total organic phosphorus for coastal sections near Labrador and Baffin Island, arranged as a frequency distribution and with 95 percent confidence interval calculated for the mean in each section

Area	Data	Frequency distribution values	95 percent confidence interval
Section I-----	n -----	58	
9493-9500	\bar{x} -----	0. 1716	\pm 0. 0533
	s^2 -----	. 0393	
	s -----	. 1982	
	s/\sqrt{n} -----	. 0260	
Section G-----	n -----	86	
9477-9485	\bar{x} -----	. 1645	\pm . 0408
	s^2 -----	. 0362	
	s -----	. 1903	
	s/\sqrt{n} -----	. 0205	
Section F-----	n -----	50	
9464-9471	\bar{x} -----	. 1210	\pm . 0346
	s^2 -----	. 0147	
	s -----	. 1211	
	s/\sqrt{n} -----	. 0171	
Section E-----	n -----	26	
9471-9474	\bar{x} -----	. 1231	\pm . 0753
	s^2 -----	. 0346	
	s -----	. 1856	
	s/\sqrt{n} -----	. 0365	
Section D-----	n -----	83	
9448-9458	\bar{x} -----	. 1566	\pm . 0340
Mouth of Hudson Strait	s^2 -----	. 0243	
	s -----	. 1560	
	s/\sqrt{n} -----	. 0171	
Section D'-----	n -----	42	
9459-9463	\bar{x} -----	. 1667	\pm . 0568
UnGava Bay	s^2 -----	. 0331	
	s -----	. 1820	
	s/\sqrt{n} -----	. 0281	
Section C-----	n -----	158	
9435-9448	\bar{x} -----	. 1845	\pm . 0323
	s^2 -----	. 0428	
	s -----	. 2069	
	s/\sqrt{n} -----	. 0165	
Section B-----	n -----	92	
9422-9432	\bar{x} -----	. 1707	\pm . 0362
	s^2 -----	. 0306	
	s -----	. 1749	
	s/\sqrt{n} -----	. 0182	
Section A-----	n -----	106	
9409-9420	\bar{x} -----	. 1637	\pm . 0330
	s^2 -----	. 0292	
	s -----	. 1709	
	s/\sqrt{n} -----	. 0166	

tion. Highest organic phosphorus values are found in the surface waters in all sections. The mean value from section to section shows only limited variation, the most marked change occurring in sections E and F. It is possible that the decrease there from the level of organic phosphorus observed in all other sections represents some local excess in land runoff or drainage. No noticeable difference is seen in Ungava Bay or Hudson Strait from values along the Labrador and Baffin Island coast. The coastal concentrations of mean organic phosphorus are somewhat in excess of values reported for the full section across the Labrador Sea to Greenland. They are less than observations of 1964 in the area of Kane Basin and Smith Sound.

Vaccaro and Ryther (1960) have pointed out that high concentrations of nitrite-nitrogen in natural waters mark locations where important biologically induced changes in combined nitrogen are progressing. The assimilation of nitrate-nitrogen by marine phytoplankton is often accompanied by the production of significant amounts of extracellular nitrite. Increasing concentrations of nitrite can be expected in the upper layers of the ocean when an adequate standing crop of phytoplankton is present and an excess of nitrate is available. Such conditions are characteristic of the summer season in the Labrador Sea. The nitrite-nitrogen distributions shown in figure 1 indicate that this biological activity is concentrated in surface waters off the continental shelf and seaward of the continental slope. This is the same pattern as obtained in previous years in the Labrador Sea (see Corwin and McGill, 1963). In the absence of other data, this distribution pattern can serve as an indication of the relative production in these coastal sections. Hopefully, direct measurements will be attempted in the future and the relation of biological and chemical parameters made more evident for this region.

Nutrient distribution patterns can also be examined for indication of local currents and water masses. In general, the distribution of phosphate, nitrate, and silicate is consistent with the pattern of surface currents given by Dunbar (1951). This is particularly true in the Hudson Strait area, where a segment of the Labrador Current enters along the Baffin Island coast and an outflow to the Labrador Sea occupies the area near the Quebec coast. Such a pattern is indicated by the nutrients in section D. This circulation has given

evidence in the past of an increased Atlantic influence from 1930 to 1948, as demonstrated by both physical and biological criteria (Dunbar, 1951). Increased penetration by Atlantic water would tend to raise the nutrient levels slightly and such exchange might represent one factor in long-term budgets for the area. The nutrient quantities would also be involved in any "feedback" mechanism as proposed by Dunbar (1951) regulating water balance between parts of the Arctic Basin and the Labrador Sea.

The general pattern of distribution in the coastal sections in the Labrador Sea suggests a phenomenon analogous to the persistence of "winter water" on the continental shelf in temperate latitudes (Ketchum and Corwin, 1963). Observations for other periods of the year are needed to detail the sequence of changes taking place on the continental shelf. The available nutrient observations indicate a distinct change between onshore and offshore water but give only limited details to characterize the circulation. Russian observations on zooplankton populations suggest some systematic shift of boreal and warm water forms by season (Vladimirskaia, 1965), but agree that the higher biomass is found in the boreal fauna.

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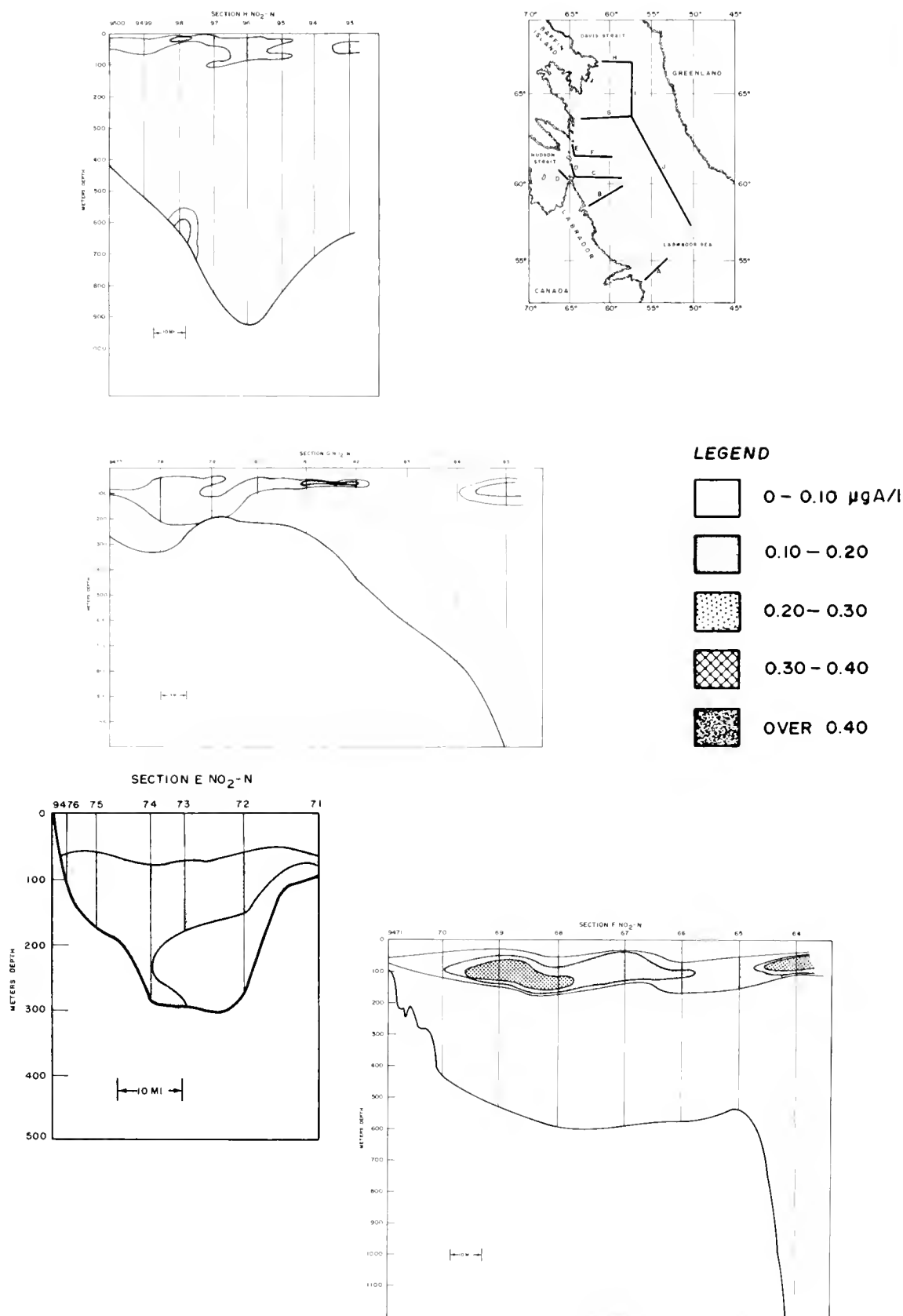


Figure 1. Vertical distribution of nitrite-nitrogen, sections E, E, G, and H.

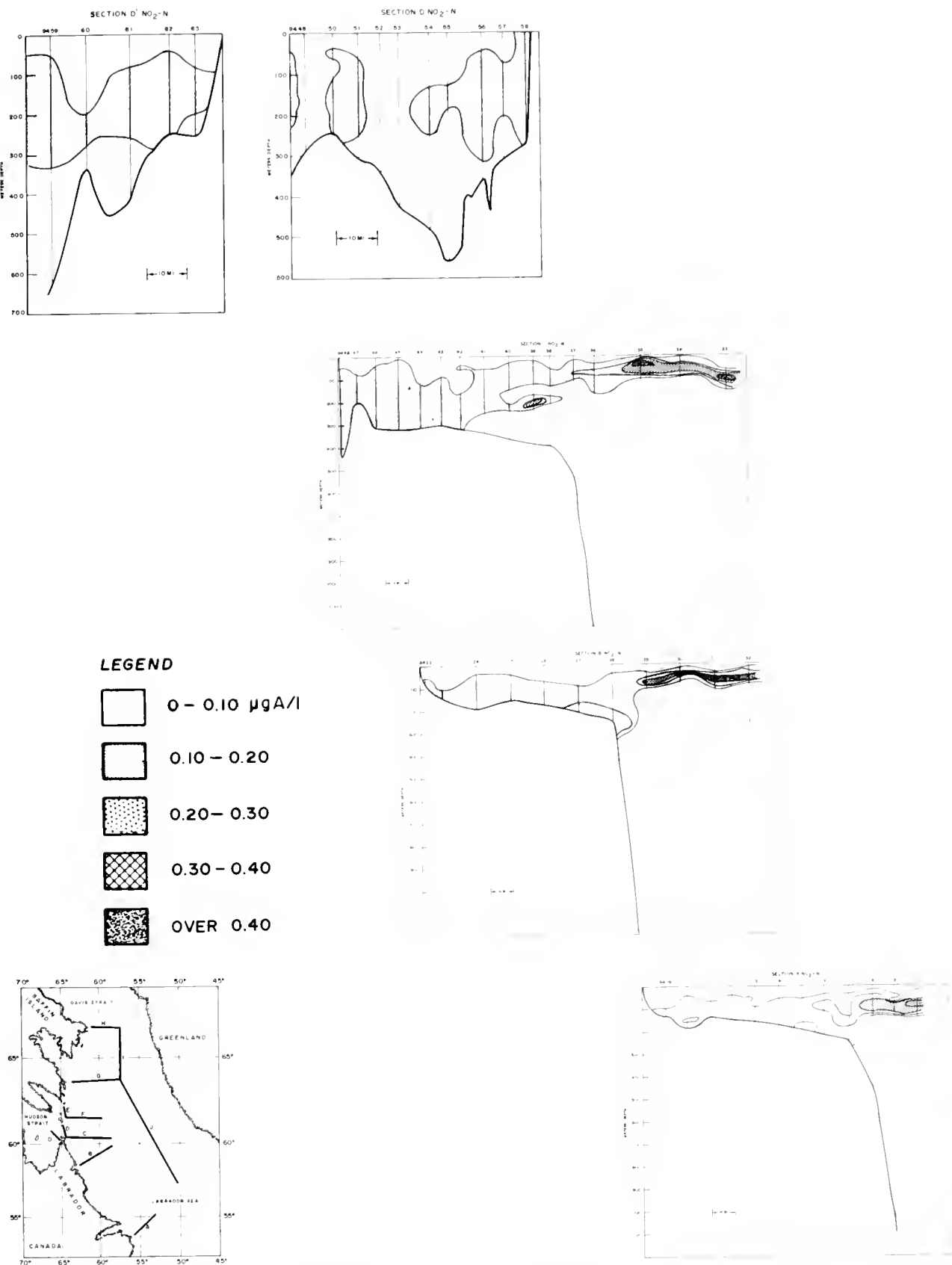


Figure 2. Vertical distribution of nitrite-nitrogen, sections A, B, C, D, and D'.

TABLE OF OCEANOGRAPHIC DATA

The following is the observed and interpolated data for the Coast Guard Oceanographic Unit oceanographic stations taken in conjunction with the International Ice Patrol 1965, Post Season Cruise in the Labrador Sea area. The data was obtained from CGC EVERGREEN during July and August 1965. Presentation is from National Oceanographic Data Center Cruise Listing No. 31-549.

Notes:

Depth to bottom—uncorrected sounding depth in meters based on a speed of sound in sea water of 4,800 ft./sec.

Depth (m)—postscript *T* indicates a depth determined by thermometric calculations.

Sound velocity—in meters per second to tenths according to Wilson's formula.

A complete description of codes can be found in NODC publication M-2, "Processing Physical and Chemical Data From Oceanographic Stations."

REFERENCE		SHIP CODE	LATITUDE ° 1° 10'	LONGITUDE ° 1° 10'	DRIFT INDICATOR	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.						10"	1"	MO		DAY	HR.			10	CRUISE NO.	STATION NUMBER	DIR.		HGT	PER		SEA
31	549	EV	53487N	05543 W		186	35	07	25	019	1965	LCE	9409	0128	01	16	3	2		X1	4	2	0001
		WATER		WIND		BARO- METER (mm Hg)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS												
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB																		
			17	516	058		111	106	7	07													

MESSAGE TIME OF HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10 ³	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SIO ₄ -Si μg - at/l	pH	S C
	019	STD	0000	0888	2781	2155	0062629	0000	14770	715							
		OBS	0000	0888	27814	2155			14770	715	031	057	004	003	008		
		STD	0010	0073	3219	2583	0021784	0042	14489	839							
	019	OBS	0010	0073	32192	2583			14489	839	059	079	005	013	003		
		STD	0020	-0054	3243	2608	0019400	0063	14436	793							
	019	OBS	0024	-0089	32505	2615			14421	780	085	101	007	039	006		
		STD	0030	-0093	3253	2617	0018497	0082	14420	774							
	019	OBS	0049	-0106	32603	2624			14418	763	092	107	009	046	007		
		STD	0050	-0107	3261	2624	0017858	0118	14418	763							
	019	OBS	0073	-0120	32681	2630			14417	762	097	114	009	042	008		
		STD	0075	-0121	3270	2632	0017079	0162	14417	760							
	019	OBS	0098	-0127	32872	2646			14420	742	101	117	010	076	011		
		STD	0100	-0126	3288	2647	0015669	0203	14422	741							
	019	OBS	0123	-0111	33004	2656			14434	733	103	115	011	082	011		

REFERENCE		SHIP CODE	LATITUDE 1° 10'	LONGITUDE 1° 10'	DRIFT INDICATOR	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.						10"	1"	MO		DAY	HR.			10	CRUISE NO.	STATION NUMBER		DIR.	HGT		PER
31	549	EV	53555N	055315W		186	35	07	25	035	1965	LCE	9410	0183	02	13	1	2		X0	0	0002
		WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB																	
			17	510	044		100	094	7	09												

MESSAGE TIME OF HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10 ³	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SIO ₄ -Si μg - at/l	pH	S C
	035	STD	0000	0661	3200	2514	0028378	0000	14736	727							
		OBS	0000	0661	32004	2514			14736	727	038	058	002	000	002		
	035	OBS	0005	0665	31935	2508			14737	726	039	055	002	000	001		
		STD	0010	0466	3218	2550	0024898	0027	14660	782							
		STD	0020	0164	3259	2609	0019289	0049	14537	869							
	035	OBS	0025	0060	32753	2629			14493	900	060	095	006	006	004		
		STD	0030	0056	3286	2637	0016599	0067	14494	871							
		STD	0050	0016	3318	2665	0013976	0097	14483	783							
	035	OBS	0050	0016	33177	2665			14483		085	099	011	049	007		
		STD	0075	-0088	3329	2678	0012682	0131	14441	730							
	035	OBS	0075	-0088	33288	2678			14441	730	104	113	015	085	011		
		STD	0100	-0056	3346	2691	0011463	0161	14462	742							
	035	OBS	0100	-0056	33462	2691			14462	742	096	108	015	083	009		
		STD	0125	0013	3370	2707	0009961	0188	14501	724							
		STD	0150	0084	3393	2722	0008624	0211	14541	712							
	035	OBS	0150	0084	33929	2722			14541	712	094	104	024	103	010		
	035	OBS	0165	0127	34065	2730			14565	707	098	107	019	106	010		
	035	OBS	0175	0201	34287	2742			14602	679	101	110	010	118	011		

REFERENCE		SHIP CODE	LATITUDE 1° 10'	LONGITUDE 1° 10'	DRIFT INDICATOR	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR.	10			CRUISE NO.	STATION NUMBER	DIR.	HGT		PER	SEA		TYPE
31	549	EV	54018N	05520 W		186	45	07	25	048	1965	LCE	9411	0137	01	13	0	2		X0		0	0003
		WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS												
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB																		
			17	514	041		094	089	7	07													

MESSAGE TIME OF HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10 ³	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SIO ₄ -Si μg - at/l	pH	S C
	048	STD	0000	0624	3208	2524	0027351	0000	14722	733							
		OBS	0000	0624	32082	2524			14722	733	048	076	002	002	002		
		STD	0010	0621	3208	2525	0027319	0027	14722	737							
	048	OBS	0010	0621	32083	2525			14722	737	043	062	001	000	002		
		STD	0020	0343	3242	2581	0021941	0052	14613	822							
	048	OBS	0025	0230	32559	2602			14567	844	043	067	003	000	003		
		STD	0030	0145	3267	2617	0018560	0072	14531	817							
		STD	0050	-0073	3302	2656	0014784	0106	14440	744							
	048	OBS	0050	-0073	33022	2656			14440	744	094	106	009	069	009		
		STD	0075	-0074	3325	2674	0013062	0140	14447	733							
	048	OBS	0075	-0074	33245	2674			14447	733	098	110	013	085	011		
		STD	0100	-0059	3345	2690	0011580	0171	14461	734							
	048	OBS	0100	-0059	33445	2690			14461	734	100	110	017	088	011		
		STD	0125	-0022	3362	2702	0010398	0199	14484	733							
	048	OBS	0132	-0008	33662	2705			14492	732	097	109	017	085	010		

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARDEN SQUARE	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER		
CTRY CODE	ID. NO.					10"	1"		MO	DAY			HR./10	CRUISE NO.	STATION NUMBER		DIR.	HGT		PER	SEA
31	549	EV	54338N	054348W	186	44	07 25 118	1965	LCE	9415	0192	02	15	3	4		X4	7	8	0007	
		WATER		WIND		BARO- METER		AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS									
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB																
		17	S20	034	078	078	0	08													
MESSAGE TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{dl}^{-1}$	SiO ₄ -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH				
		STD	0000	0590	3196	2518	0027909		0000	14706	732										
118		OBS	0000	0590	31955	2518				14706	732	039	059	000	000	002					
		STD	0010	0504	3219	2547	0025183		0027	14676	759										
118		OBS	0010	0504	32194	2547				14676	759	038	060	002	000	002					
		STD	0020	0164	3277	2624	0017922		0048	14539	793										
118		OBS	0025	0043	32979	2648				14489	800	067	091	008	027	005					
		STD	0030	0009	3304	2654	0014993		0065	14475	780										
		STD	0050	-0075	3323	2673	0013215		0093	14442	728										
118		OBS	0050	-0075	33226	2673				14442	728	102	112	010	085	010					
		STD	0075	-0061	3336	2683	0012209		0125	14454	728										
118		OBS	0075	-0061	33363	2683				14454	728	105	131	013	149	011					
		STD	0100	-0051	3350	2694	0011186		0154	14465	730										
118		OBS	0100	-0051	33501	2694				14465	730	096	109	015	103	010					
		STD	0125	0012	3374	2711	0009651		0180	14502	727										
		STD	0150	0062	3390	2721	0008710		0203	14531	723										
118		OBS	0150	0062	33900	2721				14531	723	098	104	017	112	010					
118		OBS	0175	0098	33996	2726				14552	705	092	110	004	115	011					

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARDEN SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER				
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR:1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT		PER	SEA		TYPE	AMT		
31	549	EV	54413N	054227W	186 44	07	25	137	1965	LCE	9416	0220	02	18	3	4		X4	X 9		0008				
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS									
		COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB		WET BULB																	
					17	S18	030	089	083	0	09														
MESSAGE TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{dl}^{-1}$	SiO ₄ -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH							
		STD	0000	0603	3218	2534		0026394		0000	14715	715													
137		OBS	0000	0603	32177	2534					14715	715	036	058	002	000	002								
		STD	0010	0584	3219	2538		0026074		0026	14709	720													
137		OBS	0010	0584	32192	2538					14709	720	039	055	009	000	002								
		STD	0020	0491	3298	2611		0019150		0049	14683	752													
137		OBS	0025	0434	33258	2639					14664	759	028	046	002	000	002								
		STD	0030	0328	3327	2650		0015400		0066	14620	743													
		STD	0050	0040	3335	2678		0012778		0094	14497	701													
137		OBS	0051	0031	33359	2679					14493	700	094	117	018	043	012								
		STD	0075	-0010	3354	2696		0011076		0124	14480	700													
137		OBS	0076	-0012	33544	2696					14480	700	104	117	022	078	012								
		STD	0100	0030	3372	2708		0009901		0150	14505	690													
137		OBS	0101	0032	33730	2709					14507	690	100	117	023	083	011								
		STD	0125	0083	3392	2721		0008684		0174	14536	680													
		STD	0150	0129	3408	2731		0007772		0194	14563	670													
137		OBS	T0152	0132	34090	2731					14565	669	113	126	013	112	014								
		STD	0200	0193	3426	2741		0006894		0231	14602	647													
137		OBS	T0202	0197	34271	2741					14605	646	117	132	013	120	014								
137		OBS	0213	0224	34331	2744					14619	640	124	143	014	128	016								

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DUFF INNOV	MARS DEN SQUARE		STATION TIME IGMT			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER				
CTRY CODE	ID. NO.					10°	1'	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT			
31	549	EV	54485N	054103W		186	44	07	25	150	1965	LCE	9417	0247	02	17	2	4		X4	X 9	0009				
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS										
						COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE	DRY BULB		WET BULB														
										18	515	030	089			089	0	09								
MESSNGR TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S C									
		STD	0000	0417	3256	2585	0021541	0000	14643	746																
150		OBS	0000	0417	32561	2585			14643	746	049	077	005	000	004											
		STD	0010	0368	3257	2591	0021040	0021	14624	752																
150		OBS	0010	0368	32568	2591			14624	752	056	081	003	000	003											
		STD	0020	0265	3282	2620	0018272	0041	14585	760																
150		OBS	0025	0223	32935	2632			14569	764	077	123	008	018	004											
		STD	0030	0196	3306	2644	0015942	0058	14559	750																
		STD	0050	0118	3345	2681	0012465	0086	14533	709																
150		OBS	0051	0115	33470	2683			14532	708	066	082	015	046	007											
		STD	0075	0093	3372	2704	0010261	0115	14530	690																
150		OBS	0076	0092	33730	2705			14530	689	083	099	017	064	009											
		STD	0100	0063	3383	2715	0009250	0139	14522	679																
150		OBS	0102	0061	33837	2716			14521	678	090	100	019	092	010											
		STD	0125	0103	3397	2724	0008430	0161	14546	669																
		STD	0150	0164	3414	2733	0007565	0181	14580	657																
150		OBS	T0152	0170	34150	2734			14583	656	096	104	026	110	010											
		STD	0200	0342	3454	2750	0006085	0215	14671	624																
150		OBS	T0203	0346	34550	2750			14673	623	048	111	016	123	010											
150		OBS	0244	0332	34538	2751			14674	623	100	113	015	144	011											

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARS DEN SQUARE		STATION TIME IGMT			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.				10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT.	PER		SEA	TYPE		AMT
31	549	EV	54562N	053578W	186	43	07	25	173	1965	LCE	9418	0454	05	21	4	2		X4	X 9		0010
					WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
		COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB															
			16	514	024	072	072	0		11												
MESSNGR TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S C					
173		STD	0000	0465	3263	2586	0021464	0000	14664	743												
		OBS	0000	0465	32634	2586			14664	743	044	069	004	000	003							
173		STD	0010	0296	3307	2637	0016620	0019	14600	781												
		OBS	0010	0296	33071	2637			14600	781	047	072	008	007	004							
173		STD	0020	0295	3344	2667	0013828	0034	14606	737												
		OBS	0025	0288	33588	2679			14606	720	054	071	011	035	005							
173		STD	0030	0267	3366	2687	0011939	0047	14598	710												
		STD	0050	0182	3394	2716	0009179	0068	14569	679												
173		OBS	0051	0178	33950	2717			14567	678	078	089	022	081	008							
		STD	0075	0262	3420	2730	0007843	0090	14611	661												
173		OBS	0076	0265	34210	2731			14613	660	087	098	031	100	007							
		STD	0100	0307	3438	2741	0006889	0108	14637	644												
173		OBS	0102	0311	34388	2741			14639	643	092	101	038	117	008							
		STD	0125	0361	3453	2747	0006283	0124	14666	635												
173		STD	0150	0395	3464	2753	0005816	0140	14686	626												
		OBS	0152	0397	34643	2753			14688	625	099	108	005	121	009							
173		STD	0200	0396	3468	2756	0005597	0168	14696	621												
		OBS	T0203	0396	34679	2756			14696	621	103	109	003	145	010							
173		STD	0250	0423	3475	2758	0005381	0196	14716	618												
		STD	0300	0440	3480	2761	0005243	0222	14732	614												
173		OBS	0304	0441	34803	2761			14733	614	106	118	003	134	010							
		STD	0400	0440	3483	2763	0005124	0274	14749	615												
173		OBS	0404	0440	34834	2763			14750	615	105		002	132	010							
173		OBS	T0454	0436	34837	2764			14756	612	107	115	003	150	010							

REFERENCE		SHIP CODE	LATITUDE ° 1' 10"	LONGITUDE ° 1' 10"	MAPS SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		MODE STATION NUMBER
CRY CODE	ID. NO.				10"	1"	MO	DAY	HR. 1' 10"	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA	TYPE		AMT		
31	549	EV	5503 N	053463 W	186	53	07	25	193	1965	LCE	9419	1083	11	14	2	2		X4	X	9		0011
					WATER		WIND		BARO- METER		AIR TEMP °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
					COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	AMETER (mbst)	DRY BULB	WET BULB												
							15	519	014	078	078	0	13										
MESSAGE TIME OF HR 1' 10"	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{107}	S.S.D. DYN. Δ $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{dl}^{-1}$	SIO ₄ -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	S CODE						
		STO	0000	0511	3275	2590	0021079	0000	14685	735													
193		OBS	0000	0511	32749	2590			14685	735													
193		OBS	0009	0509	32753	2591			14685	742	043	063	005	000	003								
		STD	0010	0510	3287	2600	0020166	0021	14687	738													
		STD	0020	0516	3379	2672	0013345	0037	14704	707													
193		OBS	0024	0519	34053	2692			14709	697	042	060	009	024	005								
		STD	0030	0475	3413	2704	0010357	0049	14693	690													
193		OBS	0048	0389	34326	2728			14663	672	064	079	016	068	006								
		STD	0050	0387	3434	2730	0007900	0067	14662	671													
193		OBS	0072	0382	34533	2746			14667	657	084	093	005	097	007								
		STD	0075	0387	3456	2747	0006268	0085	14670	656													
193		OBS	0095	0414	34702	2756			14686	646	097	102	034	133	008								
		STD	0100	0416	3471	2756	0005457	0100	14688	643													
		STD	0125	0424	3476	2759	0005190	0113	14696	630													
		STD	0150	0430	3480	2762	0004979	0126	14703	620													
193		OBS	T0189	0435	34843	2765			14712	610	107	115	004	152	010								
		STD	0200	0434	3484	2765	0004752	0150	14714	610													
		STD	0250	0430	3484	2765	0004768	0174	14720	610													
193		OBS	0277	0428	34842	2765			14724	610	101	113	002	153	010								
		STD	0300	0426	3484	2765	0004791	0198	14727	612													
193		OBS	T0367	0420	34836	2766			14735	616	105	116	003	130	010								
		STD	0400	0416	3484	2766	0004797	0246	14739	616													
		STD	0500	0407	3485	2768	0004743	0294	14752	616													
193		OBS	0552	0404	34849	2768			14759	616	113	124	004	156	011								
		STD	0600	0403	3485	2769	0004756	0341	14767	617													
		STD	0700	0400	3485	2769	0004817	0389	14782	618													
193		OBS	T0742	0398	34857	2770			14789	618	106	118	005	132	012								
		STD	0800	0396	3487	2771	0004715	0437	14798	619													
		STD	0900	0391	3488	2772	0004674	0483	14812	622													
197		OBS	T0914	0390	34883	2773			14814	622	110	123	004	127	011								
		STD	1000	0383	3489	2774	0004594	0530	14826	623													
197		OBS	1076	0374	34896	2775			14835	623	110	119	003	160	011								

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	UNIT INCHES	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE		AMT
31	549	EV	55106N	053352W		186	53	07	26	001	1965	LCE	9420	2121	15	14	2	2		X4	X	9	0012
						WATER		WIND		BARO- METER	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. IMI	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	°C	°C										
									15	517	017	078	072	0	12								
MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - \text{dl/l}$	TOTAL-P $\mu g - \text{dl/l}$	NO ₂ -N $\mu g - \text{dl/l}$	NO ₃ -N $\mu g - \text{dl/l}$	SIO ₄ -Si $\mu g - \text{dl/l}$	pH	5 CD						
		STD	0000	0648	3345	2629	0017377	0000	14750	696													
	001	OBS	0000	0648	33454	2629			14750	696	032	059	005	004	003								
		STD	0010	0658	3403	2673	0013213	0015	14763	680													
		STD	0020	0585	3437	2710	0009790	0027	14740	673													
	001	OBS	0024	0559	34479	2721			14731	670	057	071	012	040	006								
		STD	0030	0534	3450	2726	0008235	0036	14722	665													
		STD	0050	0464	3458	2741	0006885	0051	14698	652													
	001	OBS	0074	0406	34655	2753			14679	640	091	104	041	096	008								
		STD	0075	0406	3466	2753	0005707	0067	14679	640													
		STD	0100	0409	3472	2758	0005312	0080	14685	638													
		STD	0125	0412	3477	2761	0004992	0093	14691	636													
	001	OBS	0149	0415	34811	2764			14697	635	100	113	002	135	009								
		STD	0150	0415	3481	2764	0004739	0105	14697	635													
		STD	0200	0411	3482	2765	0004695	0129	14704	636													
		STD	0250	0408	3483	2766	0004652	0152	14711	636													
	001	OBS	0299	0406	34833	2767			14718	637	103	111	001	156	009								
		STD	0300	0406	3483	2767	0004650	0176	14718	637													
		STD	0400	0403	3483	2767	0004716	0223	14734	625													
	001	OBS	T0402	0403	34829	2767			14734	625	107	114	004	158	010								
		STD	0500	0394	3483	2768	0004726	0270	14746	625													
	001	OBS	0599	0385	34826	2769			14759	624	109	120	003	130	010								
		STD	0600	0385	3483	2769	0004704	0317	14759	624													
		STD	0700	0374	3486	2772	0004447	0363	14771	630													
		STD	0800	0366	3488	2775	0004281	0406	14785	636													
	001	OBS	T0800	0366	34882	2775			14785	636	108	116	002	159	010								
		STD	0900	0362	3488	2775	0004320	0449	14800	639													
		STD	1000	0359	3488	2776	0004362	0493	14815	642													
	001	OBS	1025	0358	34883	2776			14819	643	104	113	003	088	010								
		STD	1100	0356	3488	2776	0004406	0537	14831	638													
		STD	1200	0354	3489	2776	0004454	0581	14847	632													
	001	OBS	T1209	0354	34885	2776			14848	631	105	120	002	153	011								
		STD	1300	0353	3488	2776	0004528	0626	14863	631													
		STD	1400	0353	3488	2776	0004615	0671	14880	631													
		STD	1500	0353	3488	2776	0004709	0718	14897	631													
	001	OBS	T1518	0353	34881	2776			14900	631	103	118	002	142	011								

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH INCHES	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	
31	549	EV	5750 N	06140 W		187	71	07	27	123	1965	LCE	9421	0085	01	05	0	X		X1	3	6	0013
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. IMI	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	°C	°C										
									06	508	105	100	083	8	05								
MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - \text{dl/l}$	TOTAL-P $\mu g - \text{dl/l}$	NO ₂ -N $\mu g - \text{dl/l}$	NO ₃ -N $\mu g - \text{dl/l}$	SIO ₄ -Si $\mu g - \text{dl/l}$	pH	5 CD						
	123	STD	0000	0523	3051	2412	0038020	0000	14660														
		OBS	0000	0523	30512	2412			14660														
		STD	0010	0257	3147	2513	0028434	0033	14561														
	123	OBS	0015	0161	31812	2547			14524														
		STD	0020	0132	3188	2554	0024488	0060	14513														
		STD	0030	0083	3201	2568	0023220	0084	14494														
	123	OBS	0040	0043	32117	2578			14479														
		STD	0050	0013	3220	2587	0021418	0128	14468														
	123	OBS	0065	-0012	32275	2594			14460														
		STD	0075	-0013	3228	2594	0020650	0181	14461														
	123	OBS	0080	-0014	32288	2595			14462														

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE °	LONGITUDE °	GART INDEX	MARDEN SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER																											
							10"	1'	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT				PER	SEA	TYPE	AMT																							
31	549	EV	58438N	062472W		187 82	07 28 208	1965	LCE	9422		0090	01	07	2 2		X4	X 9			0014																											
<table><tr><th colspan="2">WATER</th><th colspan="2">WIND</th><th rowspan="2">BARO- METER (mmHg)</th><th colspan="2">AIR TEMP. °C</th><th rowspan="2">VIS. CODE</th><th rowspan="2">NO. OBS. DEPTHS</th><th rowspan="2">SPECIAL OBSERVATIONS</th></tr><tr><th>COLOR CODE</th><th>TRANS. (m)</th><th>DIR.</th><th>SPEED OR FORCE</th><th>DRY BULB</th><th>WET BULB</th></tr><tr><td></td><td></td><td></td><td>33</td><td>517</td><td>125</td><td>094</td><td>078</td><td>0</td><td>05</td><td></td></tr></table>																						WATER		WIND		BARO- METER (mmHg)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS	COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB				33	517	125	094	078	0	05	
WATER		WIND		BARO- METER (mmHg)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS																																							
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB																																										
			33	517	125	094	078	0	05																																							
MESSAGE TIME OF HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S C																															
208	STD	0000	0327	3145	2506	0029121	0000	14590	770																																							
	OBS	0000	0327	31451	2506			14590	770	066	082	008	023	006																																		
	STD	0010	0244	3168	2531	0026747	0028	14558	779																																							
	STD	0020	0176	3186	2550	0024913	0054	14532	788																																							
208	OBS	0025	0148	31931	2557			14522	792	076	101	010	033	007																																		
	STD	0030	0126	3198	2563	0023690	0078	14513	780																																							
	STD	0050	0062	3214	2579	0022152	0124	14490	749																																							
208	OBS	0050	0062	32135	2579			14490	749	085	112	009	039	007																																		
	STD	0075	0032	3226	2591	0021025	0178	14482	749																																							
208	OBS	0075	0032	32262	2591			14482	749	087	107	011	045	008																																		
208	OBS	0080	0027	32274	2592			14481	742	087	105	010	045	007																																		

REFERENCE		SHIP CODE	LATITUDE °	LONGITUDE °	DRIFT INCHES	MARDEN SQUARE	STATION TIME (GMT)					YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER																												
CTRY CODE	ID. NO.						1/10	2/10	MO	DAY	HR:1/10		CRUISE NO.	STATION NUMBER			OBSERVATIONS																																		
																	10'	3'	DIR.	SPEED OF FORCE				BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS																						
31	549	EV	58463N	062343W		187	82	07	28	221	1965	LCE	9423	0146	01	06	3	2		X1	3	7	0015																												
<table><tr><th colspan="2">WATER</th><th colspan="2">WIND</th><th rowspan="2">BARO- METER (mb)</th><th colspan="2">AIR TEMP. °C</th><th rowspan="2">VIS CODE</th><th rowspan="2">NO. OBS. DEPTHS</th><th rowspan="2">SPECIAL OBSERVATIONS</th></tr><tr><th>COLOR CODE</th><th>TRANS. (m)</th><th>DIR.</th><th>SPEED OF FORCE</th><th>DRY BULB</th><th>WET BULB</th></tr><tr><td></td><td></td><td></td><td>34</td><td>503</td><td>129</td><td>050</td><td>044</td><td>6</td><td>06</td><td></td></tr></table>																									WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS	COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB				34	503	129	050	044	6	06	
WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS																																										
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB																																													
			34	503	129	050	044	6	06																																										
MESSAGE TIME OF HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ σ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	S C																																		
		STD	0000	0460	3172	2514	0028315	0000	14650	760																																									
221		OBS	0000	0460	31717	2514			14650	760	045	073	002	002	001																																				
		STD	0010	0303	3186	2540	0025835	0027	14586	798																																									
		STD	0020	0178	3200	2561	0023863	0052	14535	816																																									
221		OBS	0024	0136	32053	2568			14518	818	054		003	003	002																																				
		STD	0030	0091	3214	2578	0022273	0075	14500	799																																									
221		OBS	0049	-0011	32367	2601			14459	758	087	113	008	030	005																																				
		STD	0050	-0012	3238	2602	0019933	0117	14459	758																																									
221		OBS	0072	-0048	32559	2618			14449	751	089	098	007	041	006																																				
		STD	0075	-0056	3258	2620	0018216	0165	14446	743																																									
221		OBS	0097	-0095	32741	2634			14434	702	104	129	008	074	009																																				
		STD	0100	-0093	3276	2636	0016691	0209	14435	701																																									
		STD	0125	-0078	3287	2644	0015889	0249	14448	692																																									
221		OBS	0135	-0072	32890	2646			14453	689	108	124	010	080	011																																				

REFERENCE		SHIP CODE	LATITUDE °	LONGITUDE °	GART INDEX	MARDEN SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER																																																																																																																																																																																																																																																																																																									
CTRY CODE	ID. NO.					10'	1"	MO	DAY	HR	1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT																																																																																																																																																																																																																																																																																																										
31	549	EV	58537N	062086W		187	82	07	28	239	1965	LCE	9424	0192	02	09	0	2		X1	3	6	0016																																																																																																																																																																																																																																																																																																										
<table><tr><td colspan="2">WATER</td><td colspan="2">WIND</td><td rowspan="2">BARO- METER (mb)</td><td colspan="2">AIR TEMP. °C</td><td rowspan="2">VIS CODE</td><td rowspan="2">NO. OBS. DEPTHS</td><td rowspan="2">SPECIAL OBSERVATIONS</td></tr><tr><td>COLOR CODE</td><td>TRANS. (m)</td><td>DIR.</td><td>SPEED OR FORCE</td><td>DRY BULB</td><td>WET BULB</td></tr><tr><td></td><td></td><td></td><td>02</td><td>502</td><td>125</td><td>067</td><td>061</td><td>8</td><td>07</td><td></td></tr></table>																										WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS	COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB				02	502	125	067	061	8	07																																																																																																																																																																																																																																																																														
WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS																																																																																																																																																																																																																																																																																																																								
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB																																																																																																																																																																																																																																																																																																																											
			02	502	125	067	061	8	07																																																																																																																																																																																																																																																																																																																								
<table><tr><th>MESSAGE TIME OF HR 1/10</th><th>CARD NO.</th><th>CARD TYPE</th><th>DEPTH (m)</th><th>T °C</th><th>S ‰</th><th>SIGMA-T</th><th>SPECIFIC VOLUME ANOMALY-σ_t</th><th>$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$</th><th>SOUND VELOCITY</th><th>O₂ ml/l</th><th>PO₄-P $\mu\text{g} \cdot \text{at/l}$</th><th>TOTAL-P $\mu\text{g} \cdot \text{at/l}$</th><th>NO₂-N $\mu\text{g} \cdot \text{at/l}$</th><th>NO₃-N $\mu\text{g} \cdot \text{at/l}$</th><th>SiO₄-Si $\mu\text{g} \cdot \text{at/l}$</th><th>pH</th><th>S C</th></tr><tr><td rowspan="3">239</td><td></td><td>STD</td><td>0000</td><td>0486</td><td>3169</td><td>2509</td><td>0028764</td><td>0000</td><td>14660</td><td>768</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>OBS</td><td>0000</td><td>0486</td><td>31692</td><td>2509</td><td></td><td></td><td>14660</td><td>768</td><td>047</td><td>077</td><td>003</td><td>000</td><td>003</td><td></td><td></td></tr><tr><td></td><td>STD</td><td>0010</td><td>0322</td><td>3198</td><td>2548</td><td>0025083</td><td>0027</td><td>14596</td><td>812</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="3">239</td><td></td><td>STD</td><td>0020</td><td>0193</td><td>3223</td><td>2578</td><td>0022216</td><td>0051</td><td>14545</td><td>832</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>OBS</td><td>0025</td><td>0142</td><td>32353</td><td>2592</td><td></td><td></td><td>14525</td><td>834</td><td>102</td><td>074</td><td>005</td><td>007</td><td>003</td><td></td><td></td></tr><tr><td></td><td>STD</td><td>0030</td><td>0112</td><td>3248</td><td>2604</td><td>0019803</td><td>0072</td><td>14514</td><td>815</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="3">239</td><td></td><td>STD</td><td>0050</td><td>0022</td><td>3284</td><td>2638</td><td>0016568</td><td>0108</td><td>14481</td><td>756</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>OBS</td><td>0050</td><td>0022</td><td>32841</td><td>2638</td><td></td><td></td><td>14481</td><td>756</td><td>072</td><td>095</td><td>011</td><td>038</td><td>006</td><td></td><td></td></tr><tr><td></td><td>STD</td><td>0075</td><td>-0025</td><td>3296</td><td>2649</td><td>0015452</td><td>0148</td><td>14465</td><td>719</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="3">239</td><td></td><td>OBS</td><td>0075</td><td>-0025</td><td>32958</td><td>2649</td><td></td><td></td><td>14465</td><td>719</td><td>090</td><td>106</td><td>012</td><td>062</td><td>009</td><td></td><td></td></tr><tr><td></td><td>STD</td><td>0100</td><td>0006</td><td>3318</td><td>2666</td><td>0013900</td><td>0185</td><td>14487</td><td>712</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>OBS</td><td>0100</td><td>0006</td><td>33179</td><td>2666</td><td></td><td></td><td>14487</td><td>712</td><td>094</td><td>112</td><td>012</td><td>079</td><td>010</td><td></td><td></td></tr><tr><td rowspan="3">239</td><td></td><td>STD</td><td>0125</td><td>0044</td><td>3337</td><td>2679</td><td>0012675</td><td>0218</td><td>14511</td><td>712</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>OBS</td><td>0125</td><td>0044</td><td>33365</td><td>2679</td><td></td><td></td><td>14511</td><td>712</td><td>081</td><td>110</td><td>012</td><td>069</td><td>009</td><td></td><td></td></tr><tr><td></td><td>STD</td><td>0150</td><td>0067</td><td>3351</td><td>2689</td><td>0011702</td><td>0248</td><td>14528</td><td>697</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>239</td><td></td><td>OBS</td><td>0190</td><td>0074</td><td>33641</td><td>2699</td><td></td><td></td><td>14539</td><td>643</td><td>MUD</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																										MESSAGE TIME OF HR 1/10	CARD NO.	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		STD	0010	0322	3198	2548	0025083	0027	14596	812																																																																																																																																																																																																																																																																																																																							
239		STD	0020	0193	3223	2578	0022216	0051	14545	832																																																																																																																																																																																																																																																																																																																							
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239		STD	0050	0022	3284	2638	0016568	0108	14481	756																																																																																																																																																																																																																																																																																																																							
		OBS	0050	0022	32841	2638			14481	756	072	095	011	038	006																																																																																																																																																																																																																																																																																																																		
		STD	0075	-0025	3296	2649	0015452	0148	14465	719																																																																																																																																																																																																																																																																																																																							
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		STD	0100	0006	3318	2666	0013900	0185	14487	712																																																																																																																																																																																																																																																																																																																							
		OBS	0100	0006	33179	2666			14487	712	094	112	012	079	010																																																																																																																																																																																																																																																																																																																		
239		STD	0125	0044	3337	2679	0012675	0218	14511	712																																																																																																																																																																																																																																																																																																																							
		OBS	0125	0044	33365	2679			14511	712	081	110	012	069	009																																																																																																																																																																																																																																																																																																																		
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239		OBS	0190	0074	33641	2699			14539	643	MUD																																																																																																																																																																																																																																																																																																																						

REFERENCE		SHIP CODE	LATITUDE 1-10	LONGITUDE 1-10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER																											
CTRY CODE	ID. NO.					MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT PER	SEA		TYPE	AMT																												
31	549	EV	59013N	061428W	187	91	07	29	020	1965	LCE	9425	0155	01	06	0	2	X4	X	9	0017																										
<table><tr><td colspan="2">WATER</td><td colspan="2">WIND</td><td rowspan="2">BARO- METER</td><td colspan="2">AIR TEMP. °C</td><td rowspan="2">VIS CODE</td><td rowspan="2">NO. OBS. DEPTHS</td><td rowspan="2">SPECIAL OBSERVATIONS</td></tr><tr><td>COLOR CODE</td><td>TRANS. (m)</td><td>DIR.</td><td>SPEED OR FORCE</td><td>DRY BULB</td><td>WET BULB</td></tr><tr><td></td><td></td><td></td><td>10</td><td>503</td><td>132</td><td>067</td><td>061</td><td>1</td><td>08</td><td></td></tr></table>																					WATER		WIND		BARO- METER	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS	COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB				10	503	132	067	061	1	08	
WATER		WIND		BARO- METER	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS																																						
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB																																									
			10	503	132	067	061	1	08																																						
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ D DYN. M $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{at}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{at}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{at}^{-1}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at}^{-1}$	pH																															
		STD	0000	0437	3183	2526	0027210	0000	14642	777																																					
020		OBS	0000	0437	31834	2526			14642	777	048	074	003	000	002																																
		STD	0010	0353	3186	2536	0026260	0027	14608	779																																					
020		OBS	0010	0353	31859	2536			14608	779	061	094	005	000	002																																
		STD	0020	0140	3213	2574	0022634	0051	14520	795																																					
020		OBS	0025	0063	32265	2589			14488	796	070	090	006	024	003																																
		STD	0030	0038	3242	2603	0019863	0072	14479	779																																					
020		OBS	0049	-0029	32830	2639			14458	732	092	112	010	067	008																																
		STD	0050	-0032	3284	2640	0016334	0109	14456	731																																					
020		OBS	0074	-0052	32990	2653			14453	712	101	124	014	068	011																																
		STD	0075	-0049	3300	2654	0015031	0148	14455	714																																					
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		STD	0100	0018	3322	2668	0013647	0184	14493	722																																					
020		OBS	0108	0036	33273	2672			14503	713	086	096	012	072	010																																
		STD	0125	0035	3338	2680	0012512	0216	14507	698																																					
020		OBS	0143	0034	33485	2689			14511	687	101	111	014	084	012																																

REFERENCE		SHIP CODE	LATITUDE 1-10	LONGITUDE 1-10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER																																					
CTRY CODE	ID. NO.					MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT PER	SEA		TYPE	AMT																																						
31	549	EV	59079N	061177W	187	91	07	29	042	1965	LCE	9426	0177	02	03	1	2	X4	X	9	0018																																				
<table><tr><td colspan="2">WATER</td><td colspan="2">WIND</td><td colspan="2">BARO- METER</td><td colspan="2">AIR TEMP. °C</td><td colspan="2">VIS.</td><td colspan="2" rowspan="2">NO. OBS. DEPTHS</td><td colspan="2" rowspan="2">SPECIAL OBSERVATIONS</td></tr><tr><td>COLOR CODE</td><td>TRANS. (m)</td><td>DIR.</td><td>SPEED OR FORCE</td><td>(mbs)</td><td>DRY BULB</td><td>WET BULB</td><td>VIS. CODE</td><td>NO. OBS. DEPTHS</td></tr><tr><td></td><td></td><td></td><td>00</td><td>500</td><td>139</td><td>044</td><td>039</td><td>2</td><td>06</td><td colspan="2"></td><td colspan="2"></td></tr></table>																					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS.		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mbs)	DRY BULB	WET BULB	VIS. CODE	NO. OBS. DEPTHS				00	500	139	044	039	2	06				
WATER		WIND		BARO- METER		AIR TEMP. °C		VIS.		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS																																													
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042		STD	0000	0386	3151	2505	0029158	0000	14616	786																																															
		OBS	0000	0386	31513	2505			14616	786	052	082	003	002	002																																										
		STD	0010	0198	3177	2541	0025742	0027	14539	781																																															
		STD	0020	0065	3199	2567	0023281	0052	14484	774																																															
042		OBS	0025	0019	32086	2577			14465	771	079	101	008	032	004																																										
		STD	0030	0011	3215	2583	0021799	0075	14463	767																																															
		STD	0050	-0008	3239	2603	0019866	0116	14461	751																																															
042		OBS	0050	-0008	32391	2603			14461	751	087	105	009	053	008																																										
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042		OBS	0075	-0005	32693	2627			14471	737	088	101	010	063	008																																										
		STD	0100	-0008	3286	2640	0016297	0205	14476	730																																															
042		OBS	0100	-0008	32856	2640			14476	730	090	104	010	065	008																																										
		STD	0125	0007	3310	2659	0014500	0244	14490	715																																															
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042		OBS	0160	0059	33562	2694			14526	682	097	110	017	081	011																																										

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						10"	1"	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR		HGT	PER		SEA	TYPE	AMT																																						
31	549	EV	59154N	060498W	187	90	07	29	068	1965	LCE	9427	0210	02	00	0	X	X4	X	9	0019																																								
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WATER		WIND		BARO- METER		AIR TEMP. °C		VIS		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS																																																	
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068		STD	0000	0246	3194	2552	0024758	0000	14561	838																																																			
		OBS	0000	0246	31944	2552			14561	838	054	087	004	003	003																																														
		STD	0010	0160	3204	2565	0023443	0024	14526	838																																																			
068		STD	0020	0108	3218	2580	0022065	0047	14506	831																																																			
		OBS	0025	0094	32267	2588			14502	825	061	085	007	018	005																																														
		STD	0030	0100	3238	2596	0020495	0068	14507	814																																																			
068		OBS	0040	0104	32584	2613			14513	795	062	081	006	028	004																																														
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		STD	0075	0036	3302	2652	0015237	0147	14494	762																																																			
068		OBS	0075	0036	33024	2652			14494	762	071	079	009	045	005																																														
		STD	0100	0044	3317	2663	0014162	0184	14504	738																																																			
		STD	0125	0065	3336	2677	0012801	0218	14520	714																																																			
068		OBS	0125	0065	33364	2677			14520	714	081	094	013	072	008																																														
		STD	0150	0100	3361	2695	0011144	0248	14544	691																																																			
		OBS	0185	0172	34044	2725			14588	661	098	110	022	112	010																																														

REFERENCE STATION CODE	SHIP CODE	LATITUDE ° ' 10"	LONGITUDE ° ' 10"	DATE MO DAY HR 1/10	MAPS SQUARE	STATION TIME (GMT)	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER		
								CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT			
31	549	EV	59222N	060256W	187	90	07 29 088	1965	LCE	9428	0256	03	00	0	X		X4	X	9		0020
				WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
COLOR CODE		TRANS (m)	DIR	SPEED OF FORCE		(mb)		DRY BULB	WET BULB												
				06		505		132	039	039	1	07									
MESSAGE TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - dl/l$	TOTAL-P $\mu g - dl/l$	NO ₃ -N $\mu g - dl/l$	NO ₃ -N $\mu g - dl/l$	SiO ₄ -Si $\mu g - dl/l$	pH	S °C				
		STD	0000	0267	3173	2533	0026574	0000	14567	822											
	088	OBS	0000	0267	31725	2533			14567	822	062	101	004	008	004						
		STD	0010	0133	3182	2550	0024937	0026	14511	835											
	088	OBS	0010	0133	31822	2550			14511	835	052	089	004	007	003						
		STD	0020	0057	3215	2580	0022020	0049	14483	832											
	088	OBS	0024	0036	32276	2592			14476	831	087	107	009	032	006						
		STD	0030	0033	3246	2606	0019534	0070	14478	804											
	088	OBS	0049	0028	32941	2645			14485	737	080	096	016	058	007						
		STD	0050	0028	3295	2646	0015766	0105	14486	736											
		STD	0075	0031	3318	2665	0014021	0143	14494	710											
	088	OBS	0097	0033	33385	2681			14502	695	091	108	012	074							
		STD	0100	0040	3342	2683	0012238	0175	14506	695											
		STD	0125	0095	3366	2699	0010732	0204	14538	690											
	088	OBS	0145	0133	33824	2710			14561	685	087	099	018	092	008						
		STD	0150	0142	3386	2712	0009528	0229	14566	684											
		STD	0200	0213	3416	2731	0007807	0273	14610	666											
		STD	0250	0255	3430	2739	0007127	0310	14638	642											
	088	OBS	0256	0258	34309	2739			14641	639	097	104	026	124	009						

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	INCHES	MAPS SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
STATION CODE	ID. NO.					10"	1"	MO	DAY	HR.	10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE		AMT
31	549	EV	59292N	060005W		187	90	07	29	121	1965	LCE	9429	1646	12	13	0	2		X4	4	8	0021	
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
		COLOR CODE	TRANS (m)	DIR	SPEED OF FORCE		(mbs)		DRY BULB	WET BULB														
					16		504		146	067	061	1	14											
MESSAGE TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S °	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - dl/l$	TOTAL-P $\mu g - dl/l$	NO ₃ -N $\mu g - dl/l$	NO ₃ -N $\mu g - dl/l$	SiO ₄ -Si $\mu g - dl/l$	pH						
121		STD	0000	0444	3324	2636		0016694		0000	14663	746												
		OBS	0000	0444	33240	2636					14663	746	034	056	007	008	003							
		STD	0010	0386	3331	2648		0015612		0016	14642	752												
		STD	0020	0342	3337	2657		0014763		0031	14625	758												
121		OBS	0024	0328	33392	2660					14620	760	050	071	007	020	003							
		STD	0030	0316	3341	2663		0014239		0046	14616	755												
121		OBS	0032	0307	33426	2665					14613	753	034	052	008	067	003							
121		OBS	0046	0171	33761	2702					14560	732	064	082	019	057	004							
		STD	0050	0174	3380	2705		0010182		0070	14563	725												
121		OBS	0069	0204	33993	2718					14582	696	080	091	022	097	005							
		STD	0075	0223	3406	2722		0008587		0094	14592	687												
121		OBS	0092	0279	34233	2731					14622	668	093	104	031	108	007							
		STD	0100	0314	3432	2735		0007404		0114	14639	670												
		STD	0125	0400	3455	2745		0006519		0131	14683	675												
		OBS	0136	0426	34616	2748					14697	677	099	105	005	134	008							
121		STD	0150	0438	3465	2749		0006188		0147	14705	661												
		OBS	T0178	0458	34720	2752					14718	637	086	098	002	148	008							
		STD	0200	0463	3475	2754		0005764		0177	14724	636												
		STD	0250	0472	3482	2759		0005397		0205	14737	635												
121		OBS	0273	0474	34841	2760					14742	634	103	109	004	152	008							
		STD	0300	0474	3486	2762		0005180		0231	14747	634												
121		OBS	T0366	0475	34892	2764					14759	633	106	114	002	133	009							
		STD	0400	0463	3488	2764		0005013		0282	14759	634												
		STD	0500	0434	3487	2767		0004861		0332	14764	635												
		OBS	0565	0421	34869	2768					14769	636	105	117	001	142	009							
121		STD	0600	0419	3488	2769		0004716		0379	14774	632												
		STD	0700	0414	3489	2771		0004682		0426	14789	624												
		OBS	T0770	0409	34900	2772					14798	619	113	118	001	154	012							
		STD	0800	0405	3490	2772		0004598		0473	14802	617												
121		STD	0900	0395	3490	2773		0004573		0519	14814	614												
		OBS	0987	0388	34899	2774					14826	613	114	131	003	162	013							
		STD	1000	0387	3490	2774		0004568		0564	14828	613												
		STD	1100	0382	3490	2775		0004597		0610	14842	617												
121		OBS	T1165	0381	34906	2775					14853	619	112	125	003	153	013							

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		17	503	159	083	072	1	12	

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH IN FEET	MARS DEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- TER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	DIR.		HGT	PER	
31	549	EV	59434N	05909 W	186	99	07	29	186	1965	LCE	9431	2560	12	12	1	4	X4	X 9		0023

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REFERENCE		SHIP CODE	LATITUDE ° '"/10	LONGITUDE ° '"/10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NUC- STATION NUMBER	
CITY CODE	ID. NO.					MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE		AMT
31	549	EV	59505N	058443W	186	98	07	29	207	1965	LCE 9432	2743	12	12	1	3		X4	X 9	0024	
						WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS. INT.	DIR.	SPEED OR FORCE		DRY BULB	WET BULB									
									18	502	169	094	089	1	12						
MESSAGE TIME OF HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg · ml ⁻¹	TOTAL-P μg · ml ⁻¹	NO ₂ -N μg · ml ⁻¹	NO ₃ -N μg · ml ⁻¹	SiO ₄ -Si μg · ml ⁻¹	pH	NTU				
207	STD	0000	0831	3398	2645	0015930	0000	14828	667												
	OBS	0000	0831	33977	2645			14828	667												
	STD	0010	0748	3399	2658	0014689	0015	14798	678												
	STD	0020	0667	3408	2676	0012968	0029	14769	684												
207	OBS	0025	0627	34142	2686			14754	686												
	STD	0030	0571	3428	2704	0010310	0041	14735	686												
	STD	0050	0430	3473	2756	0005401	0056	14686	678												
207	OBS	0051	0427	34747	2758			14685	677												
	STD	0075	0449	3477	2757	0005327	0070	14698	649												
207	OBS	0076	0450					14698	649												
	STD	0100	0475	3479	2756	0005485	0083	14714	642												
207	OBS	0102	0477					14714	642												
	STD	0125	0488	3482	2757	0005429	0097	14723	640												
	STD	0150	0499	3484	2757	0005438	0111	14732	639												
	OBS	0152	0500	34845	2757			14733	639												
207	STD	0200	0485	3490	2763	0004889	0136	14736	637												
	OBS	T0203	0484	34907	2764			14736	637												
	STD	0250	0473	3490	2765	0004810	0161	14739	638												
207	STD	0300	0462	3490	2766	0004742	0185	14743	638												
	OBS	0305	0461	34896	2766			14743	638												
	STD	0400	0439	3489	2767	0004702	0232	14749	631												
207	OBS	T0406	0438	34884	2767			14750	631												
	STD	0500	0425	3489	2769	0004610	0278	14760	630												
	STD	0600	0412	3489	2771	0004561	0324	14771	628												
	STD	0700	0400	3489	2772	0004520	0370	14783	627												
207	STD	0800	0388	3489	2773	0004474	0415	14794	625												
	OBS	T0812	0387	34892	2774			14796	625												
	STD	0900	0376	3489	2775	0004423	0459	14806	633												
	STD	1000	0367	3489	2775	0004404	0503	14819	642												
207	OBS	1036	0364	34886	2775			14824	645												
	STD	1100	0360	3489	2776	0004398	0547	14833	643												
	STD	1200	0357	3490	2777	0004392	0591	14848	634												
207	OBS	T1218	0357	34899	2777			14851	631												

REFERENCE		SHIP CODE	LATITUDE 1°/10'	LONGITUDE 1°/10'	DRIFT INDICATOR	MARSDEN SQUARE		STATION TIME IGMT			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLING	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT PER	SEA		TYPE	AMT		
31	549	EV	60258N	058477W		222	08	07	30	012	1965	LCE	9433	2614	13	26	0	2		X4	X	9	0025
						WATER		WIND		BARO- METER		AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS IMT	DIR	SPEED OR FORCE			DRY BULB	WET BULB										
									12	503	159	067	067	1	12								
MESSAGE TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t		Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - dl/l	TOTAL-P μg - dl/l	NO ₂ -N μg - dl/l	NO ₃ -N μg - dl/l	SiO ₄ -Si μg - dl/l	pH						
		STD	0000	0838	3407	2651	0015347		0000	14832	424												
012		OBS	0000	0838	34069	2651				14832	424	023	058	006	003	003							
012		OBS	0005	0771	34070	2661				14807	675		060	007	002	005							
		STD	0010	0765	3408	2663	0014238		0015	14805	676												
		STD	0020	0752	3410	2666	0013907		0029	14802	678												
012		OBS	0026	0744	34117	2668				14800	679	029	045	003	006	003							
		STD	0030	0694	3416	2679	0012735		0042	14782	680												
		STD	0050	0502	3435	2718	0009022		0064	14711	686												
012		OBS	0052	0488	34369	2721				14705	686	043	096	003	000	003							
		STD	0075	0469	3458	2740	0006965		0084	14704	661												
		STD	0100	0455	3476	2756	0005493		0100	14705	641												
012		OBS	0104	0453	34781	2758				14705	638	104	119	057	120	009							
		STD	0125	0461	3481	2759	0005210		0113	14712	638												
		STD	0150	0469	3484	2761	0005101		0126	14720	637												
		STD	0200	0480	3489	2763	0004907		0151	14733	636												
012		OBS	0211	0481	34894	2763				14736	636	102	127	005	150	010							
		STD	0250	0481	3490	2764	0004879		0175	14742	635												
		STD	0300	0479	3491	2765	0004831		0200	14750	634												
012		OBS	T0316	0477	34918	2766				14752	633	102	137	003	158	011							
		STD	0400	0460	3491	2767	0004725		0247	14758	628												
012		OBS	0421	0456	34913	2768				14760	627	108	119	001	158	011							
		STD	0500	0437	3491	2770	0004598		0294	14765	627												
		STD	0600	0416	3491	2772	0004495		0339	14773	627												
012		OBS	0627	0411	34904	2772				14776	627	082	094	002	153	010							
		STD	0700	0403	3491	2773	0004406		0384	14784	628												
		STD	0800	0392	3491	2774	0004372		0428	14796	629												
		STD	0900	0381	3491	2776	0004334		0471	14808	630												
012		OBS	0950	0376	34914	2776				14815	631	116	124	007	162	012							
		STD	1000	0369	3491	2777	0004280		0514	14820	632												
		STD	1100	0359	3491	2778	0004245		0557	14833	633												
012		OBS	T1154	0356	34908	2778				14840	633	103	119	002	159	011							
		STD	1200	0356	3491	2778	0004285		0600	14848	633												
		STD	1300	0356	3492	2779	0004322		0643	14865	632												
112		OBS	T1336	0356	34919	2779				14871	631	101	108	001	168	011							

REFERENCE		SHIP CODE	LATITUDE 1°/10'	LONGITUDE 1°/10'	MARSDEN SQUARE		STATION TIME IGMT			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLING	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.				10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT PER	SEA		TYPE	AMT		
31	549	EV	60272N	059308W	222	09	07	30	053	1965	LCE	9434	2450	12	00	0	X		X4	X	9	0026
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS IMT	DIR	SPEED OR FORCE			DRY BULB	WET BULB									
									18	502	146	056	056	1	11							
MESSAGE TIME HR. 1/10		CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T			SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO ₂ -N $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	SiO ₄ -Si $\mu\text{g} - \text{dl/l}$	pH		
			STD	0000	0746	3395	2655			0014952		0000	14795	673								
053			OBS	0000	0746	33949	2655						14795	673	021	043	009	002	002			
			STD	0010	0710	3394	2660			0014524		0015	14782	690								
053			OBS	0011	0706	33943	2660						14781	691	021	038	013	003	002			
			STD	0020	0675	3396	2666			0013943		0029	14770	689								
			STD	0030	0609	3399	2676			0012963		0042	14746	686								
053			OBS	0035	0563	33997	2683						14728	685	033	046	010	022	003			
			STD	0050	0375	3438	2734			0007452		0063	14658	664								
053			OBS	0050	0375	34384	2734						14658	664	077	093	039	095	005			
			STD	0075	0405	3454	2744			0006598		0080	14677	650								
			STD	0100	0430	3467	2751			0005903		0096	14693	639								
			STD	0125	0450	3478	2758			0005316		0110	14707	630								
053			OBS	0129	0453	34800	2759						14709	629	102	112	001	146	008			
			STD	0150	0452	3481	2760			0005157		0123	14713	630								
			STD	0200	0450	3483	2762			0005047		0149	14720	632								
			STD	0250	0448	3485	2763			0004938		0174	14728	634								
			STD	0300	0446	3487	2765			0004829		0198	14736	637								
053			OBS	0309	0446	34868	2765						14737	637	103	118	002	146	009			
			STD	0400	0424	3486	2767			0004721		0246	14743	639								
053			OBS	T0413	0421	34859	2767						14744	639	104	116	001	154	009			
			STD	0500	0411	3486	2768			0004676		0293	14754	638								
			STD	0600	0403	3487	2770			0004608		0339	14767	637								
053			OBS	0619	0402	34874	2771						14770	637	104	111	000	146	009			
			STD	0700	0402	3489	2772			0004543		0385	14784	636								
			STD	0800	0398	3491	2774			0004442		0430	14799	634								
053			OBS	T0824	0397	34911	2774						14803	633	109	116	000	165	010			
			STD	0900	0387	3491	2775			0004390		0474	14811	631								
			STD	1000	0376	3491	2776			0004341		0518	14823	628								
053			OBS	1054	0371	34914	2777						14830	626	110	118	001	145	011			
			STD	1100	0368	3491	2777			0004331		0561	14836	627								
			STD	1200	0362	3491	2778			0004350		0604	14851	632								
053			OBS	T1242	0361	34911	2778						14857	635	109	119	005	163	010			

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	GMT INCH	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF S'PL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	
31	549	EV	60276N	060055W	223	00	07	30	082	1965	LCE	9435		2103	10	22	3	2		X2	7	8	0027
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS									
		COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB	VIS. CODE	NO. OBS. DEPTHS												
						22	S05	146	061	061	7	10											
MESSAGE TIME HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO ₂ -N $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	SiO ₄ -Si $\mu\text{g} - \text{dl/l}$	pH	S CODE						
082		STD	0000	0714	3381	2648	0015583	0000	14780	680													
		OBS	0000	0714	33807	2648			14780	680													
		STD	0010	0561	3390	2675	0013013	0014	14722	686	019	040	000	001	002								
082		STD	0020	0448	3400	2696	0011040	0026	14679	692													
		OBS	0027	0392	34074	2708			14657	696													
		STD	0030	0389	3411	2711	0009632	0037	14657	693	056	070	058	047	004								
082		STD	0050	0378	3434	2731	0007812	0054	14659	673													
		OBS	0058	0376	34415	2737			14660	666	079	088	039	099	006								
		STD	0075	0397	3452	2743	0006668	0072	14673	655													
082		STD	0100	0422	3466	2751	0005894	0088	14690	642													
		STD	0125	0440	3477	2758	0005284	0102	14703	631													
		OBS	0144	0450	34827	2762			14711	625	105	116	001	145	008								
082		STD	0150	0450	3483	2762	0004969	0115	14712	625													
		STD	0200	0447	3485	2764	0004840	0139	14719	622													
		OBS	0239	0441	34865	2766			14723	618	108	118	042	149	010								
082		STD	0250	0436	3486	2766	0004699	0163	14723	615													
		STD	0300	0416	3485	2767	0004608	0186	14723	604													
		OBS	T0375	0393	34840	2769			14725	593	112	127	003	156	013								
082		STD	0400	0390	3484	2769	0004507	0232	14728	593													
		STD	0500	0380	3484	2770	0004521	0277	14741	592													
		OBS	T0564	0376	34833	2770			14749	591	112	121	002	162	013								
082		STD	0600	0376	3483	2770	0004574	0323	14755	591													
		STD	0700	0376	3484	2770	0004641	0369	14772	593													
		OBS	0731	0375	34838	2770			14777	593	106	118	000	158	014								
082		STD	0800	0373	3484	2771	0004659	0415	14787	591													
		OBS	T0896	0369	34845	2772			14802	588	115	123	002	165	014								
		STD	0900	0370	3485	2772	0004644	0462	14803	588													
082		OBS	T0992	0382	34874	2773			14824	598	114	120	000	165	014								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	GFT INCH	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE		AMT
31	549	EV	60279N	060464W	223	00	07	30	124	1965	LCE	9436		1353	13	16	2	2		X1	4	6	0028
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS									
		COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB	VIS. CODE	NO. OBS. DEPTHS												
						16	S08	146	061	056	8	13											
MESSAGE# TIME HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO ₂ -N $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	SiO ₄ -Si $\mu\text{g} - \text{dl/l}$	pH	S CODE						
		STD	0000	0564	3329	2627	0017591	0000	14714	694													
124		OBS	0000	0564	33292	2627			14714	694	018	037	002	001	001								
		STD	0010	0443	3344	2652	0015189	0016	14667	714													
		STD	0020	0347	3357	2672	0013299	0031	14630	726													
124		OBS	0027	0295	33643	2683			14610	729	041	060	007	031	002								
		STD	0030	0282	3367	2686	0011987	0043	14605	726													
		STD	0050	0213	3382	2704	0010315	0066	14580	706													
124		OBS	0053	0206	33835	2706			14578	703	066	079	015	067	004								
		STD	0075	0178	3394	2716	0009159	0090	14571	684													
124		OBS	0080	0172	33976	2720			14569	678	074	087	020	085	005								
		STD	0100	0252	3420	2731	0007774	0111	14611	647													
124		OBS	0106	0274	34262	2734			14622	640	091	107	019	124	007								
		STD	0125	0344	3444	2742	0006797	0129	14658	633													
		STD	0150	0411	3462	2749	0006130	0145	14693	626													
124		OBS	0160	0430	34668	2751			14703	624	096	107	014	144	008								
		STD	0200	0450	3475	2756	0005621	0175	14719	621													
124		OBS	0213	0455	34773	2757			14724	620	102	110	003	144	008								
		STD	0250	0459	3480	2759	0005395	0202	14732	621													
		STD	0300	0463	3484	2761	0005204	0229	14742	622													
		STD	0400	0473	3489	2764	0005050	0280	14763	624													
124		OBS	T0426	0475	34901	2765			14769	624	103	111	001	146	010								
		STD	0500	0461	3491	2767	0004876	0330	14775	619													
		STD	0600	0441	3491	2769	0004748	0378	14784	611													
124		OBS	T0639	0433	34911	2770			14787	608	100	112	006	163	010								
		STD	0700	0415	3490	2771	0004619	0425	14789	599													
		STD	0800	0395	3489	2773	0004555	0471	14797	589													
124		OBS	T0851	0388	34886	2773			14803	586	108	118	002	152	013								
		STD	0900	0388	3489	2773	0004574	0516	14811	587													
		STD	1000	0389	3490	2774	0004618	0562	14828	590													
124		OBS	T1065	0389	34900	2774			14839	592	115	126	008	169	012								
124		OBS	T1085	0393	34911	2774			14844	597	108	122	000	161	013								
		STD	1100	0393	3491	2775	0004641	0609	14847	597													
		STD	1200	0392	3492	2775	0004659	0655	14863	599													
124		OBS	T1277	0391	34926	2776			14876	600	111	120	000	168	012								

REFERENCE		SHIP CODE	LATITUDE ° 10'	LONGITUDE ° 10'	UNIT IN/OUT	MARS SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS				WEA- CODE	CLOUD CODES		NODC STATION NUMBER				
CRUISE CODE	IO. NO.					10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR	HGT	PER		SEA	TYPE		AMT			
31	549	EV	60282N	061039W	223	01	07	30	140	1965	LCE	9437	0561	05	10	0	2		X2	4	8		0029			
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
						COLOR CODE	TRANS. (%)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB														
						16		508		135	061		050		8	12										

MISSING TIME OF HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{dl}^{-1}$	SIO ₄ -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	ACC.
		STD	0000	0331	3314	2639	0016413	0000	14614	737							
140		OBS	0000	0331	33137	2639			14614	737	036	056	001	013	003		
		STD	0010	0303	3334	2658	0014645	0016	14606	731							
		STD	0020	0239	3348	2675	0013075	0029	14582	727							
		STD	0030	0139	3355	2688	0011852	0042	14541	726							
140		OBS	0030	0139	33548	2688			14541	726	059	071	012	048	004		
140		OBS	0039	0018	33556	2695			14488	727	069	082	011	058	005		
		STD	0050	0042	3359	2697	0010961	0065	14501	713							
140		OBS	0064	0073	33834	2715			14521	683	088	096	000	090	006		
		STD	0075	0265	3424	2733	0007566	0088	14613	644							
140		OBS	0079	0310	34335	2737			14634	635	097	106	021	131	007		
140		OBS	0098	0336	34395	2739			14649	626	082	088	018	106	006		
		STD	0100	0343	3441	2740	0006993	0106	14653	625							
140		OBS	0118	0397	34531	2744			14680	619	098	107	005	141	008		
		STD	0125	0418	3459	2746	0006403	0123	14691	616							
140		OBS	0147	0466	34720	2751			14717	608	098	109	001	148	008		
		STD	0150	0468	3473	2752	0005914	0138	14718	608							
140		OBS	T0196	0482	34806	2756			14732	605	099	106	001	126	008		
		STD	0200	0481	3481	2757	0005516	0167	14733	605							
		STD	0250	0469	3483	2760	0005288	0194	14736	599							
		STD	0300	0454	3484	2762	0005100	0220	14738	594							
140		OBS	T0304	0453	34842	2762			14739	593	109	123	005	140	012		
140		OBS	T0362	0432	34845	2765			14740	586	112	122	002	158	012		
		STD	0400	0432	3485	2765	0004925	0270	14746	586							
140		OBS	0478	0433	34845	2765			14759	586	099	113	002	147	011		

REFERENCE		SHIP CODE	LATITUDE * 1 10	LONGITUDE * 1 10	ORIG. INSTR.	MARS DEN		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH O BOTTOM	MAX. DEPTH OF SMP'L'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODE	STATION NUMBER	NODC STATION NUMBER
CRUISE CODE	ID. NO.					10"	1"	MO	DAY	HR.1/10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA	TYPE				
31	549	EV	60284N	061237W	223	01	07	30	157	1965	LCE	9438	0402	03	13	1	2		X4	7	8		0030	
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL									
						COLOR CODE	TRANS. INT.	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			OBSERVATIONS									
						15	509		135	050	040	1	11											

MISSING TIME OF HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{dl}^{-1}$	SIO ₄ -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	ACC.
		STD	0000	0236	3081	2462	0033292	0000	14541	897							
157		OBS	0000	0236	30810	2462			14541	897	068	088	018	061	006		
		STD	0010	0179	3097	2479	0031699	0032	14520	888							
157		OBS	0013	0162	30999	2482			14513	886	052	109	005	000	004		
		STD	0020	0124	3105	2488	0030793	0064	14498	881							
157		OBS	0020	0124	31046	2488			14498	881	054	095	005	001	003		
		STD	0030	0002	3195	2567	0023288	0091	14456	811							
157		OBS	0040	-0060	32569	2619			14438	759	087	101	009	054	009		
		STD	0050	-0029	3279	2636	0016729	0131	14457	727							
157		OBS	0059	-0009	32931	2646			14470	709	093	104	010	075	009		
		STD	0075	0005	3304	2655	0014962	0170	14480	707							
157		OBS	0079	0009	33070	2657			14483	706	093	115	011	064	009		
		STD	0100	0022	3321	2667	0013743	0206	14495	701							
157		OBS	0118	0050	33372	2679			14513	695	094	108	013	080	010		
		STD	0125	0066	3344	2683	0012229	0239	14522	694							
		STD	0150	0140	3373	2702	0010498	0267	14563	683							
157		OBS	T0160	0177	33868	2711			14583	675	080	093	003	088	006		
157		OBS	T0194	0335	34459	2744			14666	629	094	103	012	135	008		
		STD	0200	0345	3449	2746	0006490	0310	14671	626							
157		OBS	T0236	0393	34631	2752			14700	611	103	113	003	134	009		
		STD	0250	0406	3467	2754	0005799	0340	14708	606							
		STD	0300	0428	3478	2760	0005261	0368	14727	595							
157		OBS	0302	0428	34780	2760			14727	595	107	115	003	149	011		

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CITY CODE	ID. NO.					10'	1'	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE
31	549	EV	60285N	061382W	223	01	07	30	170	1965	LCE	9439	0389	04	19	1	2		X4	7	8	0031
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS								
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB															
					17	S08	125	033	033	1	09											
MESSNGR TIME HR 1/10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg · dl ⁻¹	TOTAL-P μg · dl ⁻¹	NO ₂ -N μg · dl ⁻¹	NO ₃ -N μg · dl ⁻¹	SIO ₄ -S μg · dl ⁻¹	pH	TEMP. °C					
		STD	0000	0242	3077	2458	0033652	0000	14543	870												
170		OBS	0000	0242	30768	2458			14543	870	098	158	014	002	010							
		STD	0010	0037	3175	2549	0024981	0029	14466	829												
170		OBS	0015	-0024	32124	2582			14444	805	068	095	008	026	005							
		STD	0020	-0047	3240	2605	0019656	0052	14438	776												
170		OBS	0025	-0061	32634	2625			14436	751	085	096	013	054	007							
		STD	0030	-0044	3273	2632	0017136	0070	14446	738												
		STD	0050	0012	3304	2654	0015017	0102	14479	700												
170		OBS	0050	0012	33038	2654			14479	700	098	109	014	068	010							
		STD	0075	0049	3330	2673	0013226	0137	14504	688												
170		OBS	0075	0049	33297	2673			14504	688	095	112	011	081	011							
		STD	0100	0067	3352	2690	0011612	0169	14519	683												
170		OBS	0100	0067	33522	2690			14519	683	091	109	012	065	009							
		STD	0125	0088	3370	2703	0010385	0196	14536	681												
		STD	0150	0115	3387	2715	0009269	0221	14554	678												
170		OBS	0151	0116	33881	2716			14555	678	095	111	007	096	009							
		STD	0200	0255	3429	2738	0007174	0262	14630	649												
		STD	0250	0356	3459	2753	0005888	0294	14686	627												
		STD	0300	0415	3476	2760	0005270	0322	14721	610												
170		OBS	T0305	0419	34771	2761			14724	609	110	126	007	138	012							
170		OBS	T0389	0420	34771	2760			14738	597												

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER					
CITY CODE	ID. NO.					10'	1'	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE	AMT			
31	549	EV	60287N	061588W	223	01	07	30	191	1965	LCE	9440	0371	03	10	0	2		X1	3	7		0032			
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS												
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	VIS CODE		NO. OBS. DEPTHS																
					17	S05	112	033	033	8	10															
MESSNGR TIME HR 1/10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{dl}^{-1}$	SIO ₄ -S $\mu\text{g} \cdot \text{dl}^{-1}$	pH	TEMP. °C									
191		STD	0000	0237	3216	2570	0023054	0000	14560	807																
		OBS	0000	0237	32160	2570			14560	807	052	097	003	010	004											
		STD	0010	0171	3244	2597	0020474	0022	14536	792																
		STD	0020	0124	3267	2618	0018430	0041	14520	780																
191		OBS	0026	0104	32791	2629			14514	773	061	093	010	033	006											
		STD	0030	0099	3285	2634	0016912	0059	14513	770																
		STD	0050	0091	3311	2655	0014902	0091	14516	754																
191		OBS	0050	0091	33108	2655			14516	754	068	085	011	048	006											
		STD	0075	0115	3329	2668	0013671	0126	14534	737																
191		OBS	0075	0115	33289	2668			14534	737	089	106	014	075	009											
191		OBS	0099	0094	33507	2687			14531	701	095	123	017	086	012											
		STD	0100	0095	3351	2687	0011868	0158	14532	701																
		STD	0125	0112	3360	2694	0011296	0187	14545	694																
191		OBS	0149	0129	33774	2706			14559	680	153	176	010	125	012											
		STD	0150	0133	3379	2707	0009996	0214	14561	679																
191		OBS	T0197	0278	34354	2741			14640	630	107	132	005	146	011											
		STD	0200	0286	3438	2743	0006768	0256	14645	629																
191		OBS	T0235	0358	34588	2752			14684	618																
		STD	0250	0376	3464	2755	0005714	0287	14695	613																
191		OBS	T0297	0408	34728	2758			14717	602	108	126	006	147	012											
		STD	0300	0408	3473	2758	0005433	0315	14718	602																
191		OBS	0345	0406	34728	2759			14724	600	108	126	006	130	014											

REFERENCE		SHIP CODE	LATITUDE * 1. 10	LONGITUDE * 1. 10	DATE DD-MN-YY	MARSDEN		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEA- TH- ER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO					10"	1"	MO	DAY	HR.		10	CRUISE NO.			STATION NUMBER	DIR	HGT	PER		SEA	10%L	
31	549	EV	60288N	062208W	223 02	07	30	206	1965	LCE	9441	0342	03	12	0	4			x1	3	7		0033

31	549	EV	60288N	062208W	223	02	07	30	206	1965	LCE	9441	0342	03	12	0	4	X1	3	7	0033
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WATER		WIND		BARO- METER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		16	508	125	092	092	8	11	

MISSING	CAST	CARD	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME	Σ Δ D	SOUND	O ₂ ml/l	PO ₄ -P	TOTAL-P	NO ₂ -N	NO ₃ -N	SiO ₄ -Si	pH	CONT.
TIME	NO.	TYPE					ANOMALY-‰	YN, M.	VELOCITY		μg - ml-1	μg - ml-1	μg - ml-1	μg - ml-1	μg - ml-1		
HR 1:10								X 10 ³									
		STD	0000	0222	3117	2492	0030438	0000	14540	915							
206		OBS	0000	0222	31173	2492			14540	915	044	106	004	000	001		
		STD	0010	0138	3161	2532	0026580	0029	14510	840							
		STD	0020	0080	3192	2561	0023892	0054	14490	790							
206		OBS	0021	0076	31945	2563			14489	786	073	103	010	029	005		
		STD	0030	0056	3205	2572	0022775	0077	14483	774							
206		OBS	0040	0044	32186	2584			14481	760	082	096	009	052	006		
		STD	0050	0046	3238	2599	0020200	0120	14486	745							
206		OBS	0059	0047	32520	2611			14490	735	088		010	055	008		
		STD	0075	0008	3265	2623	0017951	0168	14476	724							
206		OBS	0079	0002	32680	2626			14475	722	089	107	011	069	008		
		STD	0100	0009	3288	2641	0016191	0210	14484	730							
206		OBS	0118	0014	33084	2658			14492	733	092	117	012	068	009		
		STD	0125	0037	3318	2664	0014045	0248	14505	732							
		STD	0150	0108	3350	2686	0012029	0281	14546	730							
206		OBS	T0154	0118	33552	2689			14552	730	074	088	014	052	006		
206		OBS	0191	0194	33998	2720			14598	670	093	102	019	108	008		
		STD	0200	0203	3402	2721	0008784	0333	14604	668							
206		OBS	T0213	0227	34091	2724			14617	661	095	107	020	108	008		
206		OBS	0242	0328	34427	2742			14670	629	100	109	012	131	005		
		STD	0250	0340	3448	2745	0006556	0371	14677	625							
206		OBS	T0266	0344	34536	2750			14682	623	104	112	006	134	011		

REFERENCE		SHIP CODE	LATITUDE * 1, 10	LONGITUDE * 1, 10	DATE MO DAY	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH SMPLS	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	DIR		HGT	PER	
31	549	EV	60292N	062411W	223	02	07	30	230	1965	LCE	9442	0323	03	17	2	3	X1	3	7	0034

31	549	EV	60292N	062411W	223	02	07	30	230	1965	LCE	9442	0323	03	17	2	3	X1	3	7	0034
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WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		18	507	129	039	039	8	10	

MISSING	CAST	CARD	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME	Σ Δ D	SOUND	O ₂ ml/l	PO ₄ -P	TOTAL-P	NO ₂ -N	NO ₃ -N	SiO ₄ -Si	pH	CONT.
TIME	NO.	TYPE					ANOMALY-‰	YN, M.	VELOCITY		μg - ml-1	μg - ml-1	μg - ml-1	μg - ml-1	μg - ml-1		
HR 1:10								X 10 ³									
		STD	0000	0314	3089	2462	0033286	0000	14576	909							
230		OBS	0000	0314	30887	2462			14576	909	041	068	000	000	002		
		STD	0010	0172	3119	2497	0029990	0032	14520	880							
230		OBS	0010		31189				880		056	100	003	003	003		
		STD	0020	0072	3141	2520	0027741	0061	14479	822							
230		OBS	0024	0043	31497	2529			14468	804	072	096	007	030	005		
		STD	0030	0032	3164	2541	0025790	0087	14466	790							
230		OBS	0048	0010	31959	2567			14463	760	083	104	012	011	006		
		STD	0050	0009	3198	2569	0023080	0136	14463	759							
230		OBS	0072	0002	32167	2584			14466	752	086	102	008	051	007		
		STD	0075	0001	3218	2585	0021507	0192	14467	752							
230		OBS	0094	-0002	32317	2597			14470	749	086	099	009	063	008		
		STD	0100	-0001	3242	2605	0019656	0243	14473	742							
		STD	0125	0007	3279	2634	0016863	0289	14486	719							
230		OBS	T0142	0018	32995	2650			14497	708	106	138	009	082	010		
		STD	0150	0026	3302	2652	0015200	0329	14502	706							
230		OBS	T0187	0064	33366	2678			14530	697	096	106	011	096	010		
		STD	0200	0116	3369	2700	0010646	0394	14560	680							
230		OBS	T0223	0183	34075	2727			14599	662	091	096	015	113	009		
		STD	0250	0221	3414	2729	0008052	0440	14621	668							
230		OBS	0265	0224	34175	2731			14626	671	098	111	015	095	009		

REFERENCE		SHIP CODE	LATITUDE 1. 10	LONGITUDE 1. 10	DRIFT DUE	MARS SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODE STATION NUMBER
CITY CODE	ID. NO.					10"	1"	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT PER	SEA		TYPE	AMT	
31	549	EV	60293N	062583W	223	02	07	31	005	1965	LCE	9443	0307	03	18	1	2		X1	3	6	0035
WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS													
COLOR CODE	TRANS. 1m	DIR.	SPEED OR FORCE		DRY BULB	WET BULB																
		16	506	102	089	089	7	09														

MESSAGE TIME OF HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S °..	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g \cdot dl^{-1}$	TOTAL-P $\mu g \cdot dl^{-1}$	NO ₂ -N $\mu g \cdot dl^{-1}$	NO ₃ -N $\mu g \cdot dl^{-1}$	SiO ₄ -Si $\mu g \cdot dl^{-1}$	pH	S
005	STD		0000	0181	3113	2491	0030511	0000	14521	923							
	OBS		0000	0181	31128	2491			14521	923	048	095	004	073	002		
005	STD		0010	0159	3114	2494	0030283	0030	14513	923							
	OBS		0016	0142	31171	2497			14507	923	044	092	004	000	002		
005	STD		0020	0126	3120	2500	0029631	0060	14501	902							
	OBS		0027	0102	31259	2506			14492	869	053	100	005	003	002		
005	STD		0030	0095	3128	2509	0028848	0090	14490	858							
	STD		0050	0056	3147	2526	0027193	0146	14478	804							
005	OBS		0052	0052	31493	2528			14477	800	071	096	007	032	005		
	STD		0075	0016	3180	2554	0024476	0210	14468	776							
005	OBS		0079	0010	31869	2560			14467	773	084	100	009	039	007		
	STD		0100	-0016	3229	2595	0020582	0267	14464	759							
005	OBS		0104	-0019	32351	2600			14465	757	087	105	010	042	008		
	STD		0125	-0010	3250	2612	0018994	0316	14474	744							
005	STD		0150	0004	3269	2626	0017602	0362	14487	730							
	OBS		0158	0009	32758	2632			14492	726	092	117	011	072	009		
005	STD		0200	0042	3317	2663	0014136	0441	14520	705							
	OBS		T0210	0049	33253	2669			14526	701	095	113	010	083	009		
005	STD		0250	0076	3352	2689	0011677	0506	14548	691							
	OBS		0283	0096	33669	2700			14565	689	099	112	014	099	010		

REFERENCE		SHIP CODE	LATITUDE 1. 10	LONGITUDE 1. 10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODE STATION NUMBER		
CITY CODE	ID. NO.					10"	1"	MO DAY HR. 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT PER	SEA		TYPE	AMT			
31	549	EV	60294N	063167W	223	03	07	31 023	1965	LCE	9444	0316	03	15	1	2		X4	6	8	0036	
						WATER		WIND		BARO- METER (mb)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. 1m	DIR.	SPEED OR FORCE		DRY BULB	WET BULB										
									16	510	102	089	089	5	10							
MESSAGE TIME OF HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S °..	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g \cdot dl^{-1}$	TOTAL-P $\mu g \cdot dl^{-1}$	NO ₂ -N $\mu g \cdot dl^{-1}$	NO ₃ -N $\mu g \cdot dl^{-1}$	SIO ₄ -Si $\mu g \cdot dl^{-1}$	pH	S					
023	STD		0000	0258	3001	2396	0039551	0000	14540	919												
	OBS		0000	0258	30006	2396			14540	919	045	084	003	000	002							
023	STD		0010	0170	3106	2486	0030959	0035	14517	904												
	OBS		0011	0162	31128	2492			14515	901	054	102	006	002	002							
023	STD		0020	0093	3126	2507	0028993	0065	14487	860												
	OBS		0026	0060	31354	2516			14474	838	060	095	009	015	003							
023	STD		0030	0056	3144	2523	0027430	0093	14474	832												
	STD		0050	0041	3182	2555	0024450	0145	14476	802												
023	OBS		0051	0040	31839	2556			14476	801	072	095	007	030	004							
	STD		0075	0029	3214	2581	0021941	0203	14479	773												
023	OBS		0077	0027	32170	2583			14479	771	081	100	007	041	006							
	STD		0100	-0005	3248	2610	0019180	0255	14472	748												
023	OBS		0102	-0007	32507	2612			14472	746	089	102	009	059	008							
	STD		0125	-0014	3268	2626	0017605	0301	14475	735												
023	STD		0150	-0021	3283	2639	0016419	0343	14478	725												
	OBS		0154	-0022	32850	2640			14478	724	095	114	010	073	010							
023	STD		0200	0010	3299	2650	0015332	0423	14503	716												
	OBS		0206	0015	33011	2652			14506	715	095	106	012	079	010							
023	STD		0250	0058	3320	2664	0014011	0496	14536	707												
	OBS		T0284	0092	33343	2674			14559	701	098	107	010	084	011							
023	OBS		0298	0178	33916	2714			14607	670	087	101	016	099	010							

REFERENCE		SHIP CODE	LATITUDE 1° 10'	LONGITUDE 1° 10'	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER		
CTRY CODE	ID. NO.					10"	1"	MO		DAY	HR:1° 10'			CRUISE NO.	STATION NUMBER	DIR	HGT		PER	SEA		TYPE	AMT
31	549	EV	60293N	063362W	223	03	07	31	041	1965	LCE	9445	0325	02	00	0	X		X4	7	1		0037
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB											
								14		504	033 033		0	08									
MESSAGE TIME HR 1 10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY		O ₂ ml/l	PO ₄ -P $\mu g \cdot dl/l$	TOTAL-P $\mu g \cdot dl/l$	NO ₂ -N $\mu g \cdot dl/l$	NO ₃ -N $\mu g \cdot dl/l$	SiO ₄ -Si $\mu g \cdot dl/l$	pH				
	041	STD	0000	0205	3158	2525		0027255		0000	14538		901										
		OBS	0000	0205	31577	2525					14538		901	041	084	005	001	002					
		STD	0010	0132	3175	2544		0025479		0026	14509		844										
		STD	0020	0079	3192	2561		0023887		0051	14490		801										
	041	OBS	0026	0058	32010	2569					14482		781	075	092	010	041	005					
		STD	0030	0057	3207	2574		0022625		0074	14483		775										
		STD	0050	0049	3234	2596		0020524		0117	14487		750										
	041	OBS	0051	0049	32357	2597					14487		749	084	099	011	064	008					
		STD	0075	0049	3266	2622		0018077		0166	14495		725										
	041	OBS	0077	0049	32688	2624					14496		724	091	102	011	069	009					
		STD	0100	0065	3304	2651		0015267		0207	14512		713										
	041	OBS	0102	0066	33060	2653					14513		712	094	113	012	088	009					
		STD	0125	0067	3308	2654		0014971		0245	14517		706										
		STD	0150	0069	3312	2658		0014676		0282	14523		702										
	041	OBS	0154	0070	33125	2658					14524		701	098	111	012	088	010					
		STD	0200	0080	3326	2668		0013675		0353	14530		697										
	041	OBS	0206	0081	33276	2669					14540		696	094	107	011	098	010					
	041	OBS	0231	0084	33357	2676					14547		692	096	110	012	090	010					

REFERENCE		SHIP CODE	LATITUDE 1° 10'	LONGITUDE 1° 10'	MARS DEN SQUARE	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SAMPLING	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER				
CTRY CODE	ID. NO.					10"	1"		MO	DAY			HR:1° 10'	CRUISE NO.	STATION NUMBER		DIR	HGT		PER	SEA	TYPE	AMT
31	549	EV	60292N	063561W	223	03	07	31	063	1965	LCE	9446	0316	03	00	0	X		X4	7	8		0038
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB											
									17	508	088	033	033	0	10								
MESSAGE TIME HR 1, 10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - dl/l$	TOTAL-P $\mu g - dl/l$	NO ₂ -N $\mu g - dl/l$	NO ₃ -N $\mu g - dl/l$	SiO ₄ -Si $\mu g - dl/l$	pH	3 CODE						
	063	STD	0000	0237	3158	2523	0027492	0000	14552	886													
		OBS	0000	0237	31575	2523			14552	886	047	094	004	001	003								
		STD	0010	0094	3185	2554	0024518	0026	14494	822													
	063	OBS	0010	0094	31848	2554			14494	822	067	092	006	028	005								
		STD	0020	0084	3211	2576	0022465	0049	14494	795													
	063	OBS	0024	0079	32194	2583			14494	785	077	099	008	053	007								
		STD	0030	0066	3231	2593	0020843	0071	14491	770													
	063	OBS	0044	0047	32500	2609			14487	746	087	101	010	067	008								
		STD	0050	0047	3253	2611	0019064	0111	14488	744													
	063	OBS	0067	0047	32613	2618			14492	740	085	100	010	066	009								
		STD	0075	0049	3264	2620	0018230	0158	14495	738													
	063	OBS	0089	0051	32668	2622			14499	735	089	101	010	064	009								
		STD	0100	0052	3267	2622	0018027	0203	14501	734													
	063	OBS	0111	0054	32668	2622			14504	731	090	104	010	076	009								
		STD	0125	0057	3285	2637	0016664	0246	14510	723													
	063	OBS	0128	0058	32882	2639			14511	722	090	101	010	082	009								
		STD	0150	0060	3290	2640	0016312	0288	14516	720													
	063	OBS	0194	0064	32929	2643			14525	716	092		010		008								
		STD	0200	0069	3297	2646	0015810	0368	14529	713													
		STD	0250	0134	3355	2688	0011835	0437	14575	677													
	063	OBS	0263	0159	33771	2704			14591	664	103	109	014	112	012								

REFERENCE		SHIP CODE	LATITUDE ° 10'	LONGITUDE ° 10'	DRIFT INDICATOR	MARDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODE STATION NUMBER	
CTRY CODE	ID. NO.						10"	1"	MO DAY HR, 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE		AMT
31	549	EV	60270N	064128W	223	04	07	31	088	1965	LCE	9447	0201	02	15	0	X		X1	2	2	0039
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS (mt)	DIR	SPEED OR FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB									
									15	505	078	022	022	R	06							

MESSAGE TIME HR. 1:10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °..	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{at}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{at}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{at}^{-1}$	SIC ₄ -Si $\mu\text{g} \cdot \text{at}^{-1}$	pH	S.C.C.
088	OBS	STD	0000	0074	3158	2534	0026453	0000	14479	774							
		OBS	0000	0074	31581	2534			14479	774							
		STD	0010	0062	3190	2560	0023955	0025	14480	765							
		STD	0020	0054	3216	2581	0021929	0048	14482	757							
088	OBS	STD	0030	0049	3236	2598	0020352	0069	14484	751							
		OBS	0030	0049	32363	2598			14484	751	079	099	008	051	008		
088	OBS	STD	0050	0051	3253	2611	0019084	0109	14490	743							
		OBS	0059	0052	32590	2616			14493	740	083	101	007	068	008		
088	OBS	STD	0075	0053	3263	2619	0018324	0155	14496	737							
		OBS	0089	0053	32674	2623			14500	734	090	102	010	068	009		
088	OBS	STD	0100	0055	3273	2627	0017571	0200	14503	730							
		STD	0125	0059	3284	2636	0016751	0243	14511	724							
088	OBS	STD	0148	0063	32931	2643			14517	719	090	103	009	074	009		
		STD	0150	0063	3294	2643	0016011	0284	14518	719							
088	OBS	STD	0171	0067	33012	2649			14524	716	093	106	010	085	010		

REFERENCE		SHIP CODE	LATITUDE 1 10'	LONGITUDE 1 10'	DRIFT INDICATOR	MARDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODE STATION NUMBER	
CTRY CODE	ID. NO.						10"	1"	MO DAY HR.10'		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE		AMT
31	549	EV	60270N	064262W	223	04	07	31	099	1965	LCE	9448	0442	02	34	0	X		X1	3	3	0040
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS (mt)	DIR	SPEED OR FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB									
									14	504	146	038	033	8	08							

MESSAGE TIME HR. 1:10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °..	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{at}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{at}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{at}^{-1}$	SIC ₄ -Si $\mu\text{g} \cdot \text{at}^{-1}$	pH	S.C.C.
099	OBS	STD	0000	0057	3261	2617	0018546	0000	14486	736							
		OBS	0000	0057	32606	2617			14486	736	087	104	010	064	009		
		STD	0010	0056	3249	2608	0019415	0019	14485	743							
		STD	0020	0054	3238	2599	0020275	0039	14485	749							
099	OBS	STD	0023	0054	32342	2596			14485	751	086	102	008	069	009		
		STD	0030	0054	3247	2606	0019561	0059	14487	744							
099	OBS	STD	0043	0054	32620	2618			14492	737	089	103	010	070	009		
		STD	0050	0055	3262	2618	0018411	0097	14493	740							
099	OBS	STD	0065	0056	32622	2618			14496	743	089	104	013	073	009		
		STD	0075	0056	3262	2619	0018386	0143	14498	739							
099	OBS	STD	0087	0055	32627	2619			14499	735	089	104	010	076	009		
		STD	0100	0055	3262	2618	0018408	0189	14502	736							
099	OBS	STD	0125	0055	3262	2618	0018403	0235	14506	737							
		OBS	0130	0055	32616	2618			14506	737	089	104	010	076	009		
099	OBS	STD	0150	0055	3261	2617	0018474	0281	14510	737							
		OBS	0173	0055	32597	2616			14513	736	090	126	014	064	010		
099	OBS	STD	0200	0054	3260	2616	0018572	0373	14517	737							
		OBS	0216	0054	32594	2616			14520	737	089	106	011	072	009		

REFERENCE		SHIP CODE	LATITUDE ° ' "	LONGITUDE ° ' "	DRIFT INDICATOR	MARDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODE STATION NUMBER	
CTRY CODE	ID. NO.						10"	1"	MO DAY HR, T:10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE		AMT
31	549	EV	60312N	064268W	223	04	07	31	107	1965	LCE	9449	0284	03	16	0	X		X1	3	3	0041
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS (mt)	DIR	SPEED OR FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB									
									14	504	078	039	033	8	08							

MESSAGE TIME HR. 1:10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °.‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{at}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{at}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{at}^{-1}$	SIC ₄ -Si $\mu\text{g} \cdot \text{at}^{-1}$	pH	S.C.C.
107	OBS	STD	0000	0034	3194	2565	0023496	0000	14466	773							
		OBS	0000	0034	31943	2565			14466	773	081	103	007	051	008		
		STD	0010	0037	3216	2582	0021849	0023	14472	766							
		STD	0020	0040	3233	2596	0020563	0044	14477	759							
107	OBS	STD	0025	0041	32403	2602			14480	756	085	105	008	063	008		
		STD	0030	0042	3244	2604	0019730	0064	14482	752							
107	OBS	STD	0050	0044	3257	2615	0018759	0103	14488	739							
		OBS	0050	0044	32568	2615			14488	739	084	106	009	070	009		
107	OBS	STD	0074	0048	32669	2623			14495	735	090	104	007	073	009		
		STD	0075	0048	3267	2623	0017996	0148	14495	735							
107	OBS	STD	0097	0047	32779	2631			14500	725	090	104	008	078	010		
		STD	0100	0047	3280	2633	0016996	0192	14500	724							
107	OBS	STD	0125	0048	3295	2645	0015855	0233	14507	717							
		OBS	0147	0049	33039	2652			14512	713	093	109	009	082	010		
107	OBS	STD	0150	0049	3304	2652	0015171	0272	14513	713							
		OBS	0199	0049	33073	2655			14521	714	094	106	008	089	010		
107	OBS	STD	0200	0049	3308	2655	0014859	0347	14522	714							
		STD	0250	0050	3313	2659	0014477	0420	14531	711							
107	OBS	T0250	0050	33133	2660			14532	711	093	106	009	094	010			

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DPT INCH	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE		AMT
31	549	EV	60380N	064288W	223	04	07	31	125	1965	LCE	9450	0243	02	00	0	X		X1	8	4	0042	
						WATER		WIND		BARO- METER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
COLOR CODE		TRANS. INCH		DIR.	SPEED OR FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB														
				25	507	088		061	056	8	08												
MESSAGE TIME HR 1/10	CASE NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{dl}^{-1}$	SiO ₄ -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	S C						
125		STD	0000	0031	3246	2607	0019525	0000	14472	757													
		OBS	0000	0031	32461	2607			14472	757			085	101	010	065	008						
		STD	0010	0031	3252	2611	0019070	0019	14474	751													
125		STD	0020	0030	3256	2615	0018760	0038	14476	747													
		OBS	0024	0030	32566	2615			14477	745			087	103	009	069	009						
		STD	0030	0031	3257	2615	0018713	0057	14478	745													
125		OBS	0048	0032	32568	2615			14482	740			092	110	014	066	009						
		STD	0050	0033	3259	2617	0018536	0094	14483	737													
		OBS	0074	0044					715				093	126	009	066	009						
125		STD	0075	0044	3279	2632	0017062	0139	14495	715													
		STD	0100	0050	3296	2646	0015816	0180	14504	721													
		OBS	0100	0050	32957	2646			14504	721			090	102	010	080	009						
125		STD	0125	0059	3308	2655	0014926	0218	14514	720													
		STD	0150	0069	3319	2663	0014144	0255	14524	719													
		OBS	T0152	0070	33193	2663			14525	719			096	117	011	081	011						
125		STD	0200	0090	3330	2671	0013433	0324	14543	705													
		OBS	T0205	0092	33325	2673			14545	703			107	140	013	092	011						
		OBS	0231	0102	33457	2683			14556	691			093	106	010	098	017						

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DPT INCH	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR./1/10	CRUISE NO.			STATION NUMBER	DIR	HGT PER SEA		TYPE	AMT		
31	549	EV	60437N	064318W	223	04	07	31	148	1965	LCE	9451	0310	03	30	0	4		X1	8	3	0043
		WATER		WIND		BARO- METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB		DRY BULB	WET BULB														
			13	501	078		078	067	8	09												
MESSAGE TIME HR 1/10	CASE NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg · dl ⁻¹	TOTAL-P μg · dl ⁻¹	NO ₂ -N μg · dl ⁻¹	NO ₃ -N μg · dl ⁻¹	SiO ₄ -Si μg · dl ⁻¹	pH	S C					
148		STD	0000	0162	3160	2530	0026795	0000	14519	853												
		OBS	0000	0162	31601	2530			14519	853												
		STD	0010	0096	3181	2551	0024819	0026	14494	812												
		STD	0020	0052	3201	2569	0023063	0050	14479	781												
148		OBS	0026	0036	32120	2579			14474	768												
		STD	0030	0039	3220	2585	0021547	0072	14477	765												
148		OBS	0049	0046	32496	2609			14487	751												
		STD	0050	0046	3250	2609	0019287	0113	14488	751												
		STD	0075	0043	3261	2618	0018397	0160	14492	740												
148		OBS	0075	0043	32614	2618			14492	740												
148		OBS	0096	0053	32780	2631			14502	732												
		STD	0100	0054	3279	2632	0017109	0204	14503	731												
		STD	0125	0060	3288	2639	0016452	0246	14511	724												
148		OBS	T0142	0064	32979	2647			14518	718												
		STD	0150	0065	3303	2651	0015337	0286	14520	715												
148		OBS	T0184	0086	33317	2672			14539	697												
		STD	0200	0119	3356	2690	0011651	0354	14560	682												
148		OBS	T0236	0169	33916	2715			14593	660												
		STD	0250	0180	3399	2720	0008849	0405	14601	659												
148		OBS	0288	0183	33997	2720			14609	657												

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH IN METERS	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO DAY HR.1/10	CRUISE NO.	STATION NUMBER		DIR	HGT PER			SEA	TYPE	AMT				
31	549	EV	60488N	064350W	223	04	07	31	160	1965	LCE	9452	0338	03	21	1	2		X4	X 9		0044
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	(mbars)	DRY BULB	WET BULB										
									19	518	075	039	039	0	06							
MESSAGE TIME OF HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S °..	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g \cdot dl^{-1}$	TOTAL-P $\mu g \cdot dl^{-1}$	NO ₂ -N $\mu g \cdot dl^{-1}$	NO ₃ -N $\mu g \cdot dl^{-1}$	SiO ₄ -Si $\mu g \cdot dl^{-1}$	pH						
160	STD	0000	0108	3176	2546	0025283	0000	14497	836													
	OBS	0000	0108	31758	2546			14497	836		062	088	005	021	005							
	STD	0010	0068	3190	2560	0023986	0025	14483	811													
	STD	0020	0037	3201	2570	0022991	0048	14472	792													
160	STD	0030	0014	3210	2578	0022194	0071	14464	778													
	OBS	0033	0009	32126	2581			14463	775		082	099	008	054	007							
	STD	0050	0001	3219	2586	0021441	0114	14463	771													
	OBS	0060	-0002	32246	2591			14464	768		088	106	010	128	009							
160	STD	0075	-0002	3243	2606	0019585	0166	14469	757													
	STD	0100	-0002	3267	2625	0017744	0212	14476	742													
	OBS	0116	-0002	32781	2634			14480	735		091	105	009	063	009							
	STD	0125	-0000	3279	2635	0016829	0256	14483	734													
160	STD	0150	0005	3285	2639	0016389	0297	14490	730													
	OBS	T0172	0010	32930	2645			14497	725		093	108	010	082	010							
	STD	0200	0025	3307	2656	0014803	0375	14511	717													
	STD	0250	0066	3342	2682	0012373	0443	14542	697													
160	OBS	T0272	0090	33611	2696			14559	686		100	102	010	088	011							

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH IN METERS	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.						10"	1"	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT PER	SEA		TYPE	AMT		
31	549	EV	60536N	064348W	223	04	07	31	173	1965	LCE	9453	0421	03	17	2	2		X4	X 9		0045
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mbst)	DRY BULB	WET BULB										
									20	516	068	039	039	0	08							
MESSAGE TIME OF HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S °..	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g \cdot dl^{-1}$	TOTAL-P $\mu g \cdot dl^{-1}$	NO ₂ -N $\mu g \cdot dl^{-1}$	NO ₃ -N $\mu g \cdot dl^{-1}$	SiO ₄ -Si $\mu g \cdot dl^{-1}$	pH						
173	STD	0000	0035	3218	2584	0021667	0000	14470	789													
	OBS	0000	0035	32183	2584			14470	789		080	097	009	049	007							
	STD	0010	0033	3218	2584	0021702	0022	14471	790													
	STD	0020	0032	3217	2583	0021737	0043	14471	791													
173	OBS	0024	0031	32169	2583			14472	791		078	101	009	046	007							
	STD	0030	0022	3235	2598	0020321	0064	14471	773													
	OBS	0042	0011	32599	2619			14472	748		090	107	009	071	009							
	STD	0050	0018	3260	2618	0018388	0103	14476	748													
173	STD	0075	0031	3261	2618	0018390	0149	14486	746													
	OBS	0075	0031	32607	2618			14486	746		091	104	009	070	009							
	STD	0100	0029	3263	2620	0018213	0195	14490	742													
	STD	0125	0023	3265	2622	0018023	0240	14491	739													
173	OBS	T0131	0021	32653	2623			14492	738		091	104	009	070	009							
	STD	0150	0012	3272	2628	0017412	0284	14492	743													
	OBS	T0162	0008	32767	2632			14492	744		090	113	009	070	010							
	STD	0200	0005	3296	2648	0015534	0367	14500	732													
173	OBS	T0210	0004	33022	2653			14502	728		101	104	010	090	010							
	STD	0250	0043	3335	2678	0012767	0438	14531	707													
	STD	0300	0146	3391	2716	0009210	0493	14593	672													
	OBS	T0324	0217	34237	2737			14633	651		102	114	008	125	012							

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS SQUA RE	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOGC STATION NUMBER			
CITY CODE	ID. NO.					10°	1°		MO	DAY			HR./10	CRUISE NO.	STATION NUMBER		DIR	HGT		PER	SEA	TYPE
31	549	EV	60596N	064257W	223	04	07	31	190	1965	LCE	9454	0428	04	22	1	2		X4	X 9		0046
						WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	IMB	DRY BULB	WET BULB	VIS. CODE									
									20	510	091	022	022	0	10							
MESSAGE TIME HR. 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	S Δ D DYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	°C					
190	STD	0000	0095	3220	2582	0021827	0000	14497	822													
	OBS	0000	0095	32202	2582			14497	822	061	079	006	025	004								
	STD	0010	0053	3227	2590	0021087	0021	14481	815													
	STD	0020	0020	3233	2597	0020468	0042	14468	808													
190	OBS	0028	0000	32375	2601			14461	803	074	094	007	038	008								
	STD	0030	-0003	3238	2602	0019965	0062	14460	803													
190	STD	0050	-0025	3245	2608	0019367	0102	14454	794													
	OBS	0055	-0028	32463	2610			14454	789	083	102	008	046	007								
190	STD	0075	-0030	3286	2642	0016179	0146	14462	750													
	OBS	0083	-0031	32982	2651			14464	737	097	102	011	071	009								
190	STD	0100	-0026	3317	2666	0013820	0184	14472	711													
	OBS	0108	-0024	33245	2672			14475	703	095	107	010	079	010								
190	STD	0125	-0018	3325	2672	0013240	0218	14481	706													
	STD	0150	-0008	3333	2678	0012667	0250	14491	709													
190	OBS	0161	-0004	33400	2684			14495	711	098	110	008	077	010								
	STD	0200	0112	3388	2716	0009180	0305	14561	674													
190	OBS	T0215	0143	34003	2724			14579	664	102	113	008	119	011								
	STD	0250	0154	3406	2728	0008125	0348	14591	657													
190	STD	0300	0178	3414	2732	0007718	0387	14611	647													
	OBS	T0302	0179	34146	2733			14612	647	097	102	008	099	011								
190	OBS	T0381	0240	34294	2740			14653	645	104	106	009	133	011								
	STD	0400	0251	3432	2741	0007022	0461	14662	640													
190	OBS	0428	0265	34355	2742			14673	631	110	119	011	127	012								

REFERENCE		SHIP CODE	LATITUDE +	LONGITUDE +	DEPTH IN METERS	MARS SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER
CITY CODE	ID. NO.					10°	1°	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	
31	549	EV	61029N	064312W	223	14	07	31	211	1965	LCE	9455	0567	05	20	2	2		X1	3	6		0047
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
COLOR CODE		TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB		WET BULB																
					21	508	081	061	050	8	10												
MESSAGE TIME HR. 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	S Δ D DYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH							
211	STD	0000	0191	3328	2662	0014239	0000	14555	746														
	OBS	0000	0191	33279	2662			14555	746	054	070	007	034	005									
	STD	0010	0189	3328	2663	0014220	0014	14556	747														
	STD	0020	0183	3328	2663	0014180	0028	14555	747														
211	OBS	0026	0178	33287	2664			14554	748	050	067	007	033	004									
	STD	0030	0171	3330	2665	0013971	0043	14551	749														
211	STD	0050	0143	3335	2671	0013415	0070	14543	751														
	OBS	0051	0142	33348	2671			14543	751	056	082	008	037	005									
211	STD	0075	0126	3337	2674	0013125	0103	14540	759														
	OBS	0077	0123	33373	2675			14539	760	063	079	009	039	005									
211	STD	0100	0078	3343	2682	0012376	0135	14523	738														
	OBS	0102	0076	33435	2682			14523	736	062	078	008	046	005									
211	STD	0125	0087	3370	2703	0010379	0163	14535	720														
	STD	0150	0127	3397	2722	0008592	0187	14561	696														
211	OBS	0155	0138	34016	2725			14567	691	094	106	014	107	008									
	STD	0200	0302	3441	2743	0006687	0225	14652	629														
211	OBS	T0206	0317	34442	2745			14660	623	098	104	009	164	010									
	STD	0250	0320	3447	2747	0006435	0258	14669	604														
211	STD	0300	0323	3449	2748	0006350	0290	14678	582														
	OBS	T0306	0323	34493	2748			14680	579	103	112	008	118	011									
211	STD	0400	0326	3450	2748	0006395	0354	14696	620														
	OBS	T0408	0326	34498	2748			14698	622	105	118	009	131	012									
211	STD	0500	0329	3450	2748	0006486	0418	14714	625														
	OBS	T0549	0331	34507	2748			14723	627														

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH INCH	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NOOC STATION NUMBER
CITY CODE	ID. NO.					10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT PER	SEA		TYPE	AMT	
31	549	EV	61077N	064461W	223	14	07	31	229	1965	LCE	9456	0367	03	19	0	X		X4	X 9		0048
						WATER		WIND		BARO-METER		AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB											
								22	515	078	056	044	0	09								
MESSAGE TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g \cdot dl/l$	TOTAL-P $\mu g \cdot dl/l$	NO ₃ -N $\mu g \cdot dl/l$	NO ₃ -N $\mu g \cdot dl/l$	SIO ₄ -Si $\mu g \cdot dl/l$	pH			S	
229		STD	0000	0162	3331	2667		0013836		0000	14543	745										
		OBS	0000	0162	33306	2667					14543	745	058	076	007	043	005					
		STD	0010	0141	3332	2669		0013594		0014	14535	745										
229		STD	0020	0121	3333	2671		0013393		0027	14528	744										
		OBS	0022	0117	33337	2672					14527	744	064	084	008	045	006					
		STD	0030	0099	3336	2675		0013032		0040	14520	745										
229		OBS	0041	0084	33389	2678					14516	746	067	118	011	055	006					
		STD	0050	0086	3339	2678		0012728		0066	14518	747										
		OBS	0062	0089	33408	2680					14522	748	065	085	010	054	005					
229		STD	0075	0130	3345	2680		0012544		0098	14543	738										
		OBS	0082	0149	33503	2683					14553	730	064	075	012	054	005					
		STD	0100	0184	3386	2709		0009814		0126	14576	691										
229		OBS	0122	0223	34168	2731					14601	657	101	119	012	128	010					
		STD	0125	0228	3419	2732		0007667		0148	14604	655										
		STD	0150	0267	3431	2739		0007098		0166	14627	644										
229		OBS	T0168	0289	34381	2742					14641	637	103	110	010	125	010					
		STD	0200	0311	3444	2745		0006544		0200	14656	633										
		STD	0250	0328	3448	2747		0006425		0233	14672	626										
229		OBS	T0250	0328	34482	2747					14672	626	099	104	010	134	011					
229		OBS	0280	0329	34480	2747					14678	622			020	139	025					

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CITY CODE	ID. NO.					10"	1"	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT PER	SEA		TYPE	AMT		
31	549	EV	61122N	064504W	223	14	08	01	014	1965	LCE	9457	0311	03	20	1	X		X1	3 7	0049
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS					
						COLOR CODE	TRANS (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB										
								22	513	085	033	022	7	09							
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g \cdot dl/l$	TOTAL-P $\mu g \cdot dl/l$	NO ₃ -N $\mu g \cdot dl/l$	NO ₃ -N $\mu g \cdot dl/l$	SIO ₄ -Si $\mu g \cdot dl/l$	pH				
014		STD	0000	0135	3315	2656	0014816		0000	14528	752										
		OBS	0000	0135	33154	2656				14528	752	061	076	007	029	020					
		STD	0010	0108	3321	2662	0014226		0015	14519	745										
014		STD	0020	0089	3325	2667	0013811		0029	14512	740										
		OBS	0026	0080	33272	2669				14510	739	080	096	010	048	007					
		STD	0030	0079	3327	2669	0013578		0042	14510	740										
014		STD	0050	0073	3328	2670	0013505		0069	14511	745										
		OBS	0052	0072	33278	2670				14510	745	076	093	009	054	008					
		STD	0075	0068	3335	2676	0012925		0102	14513	732										
014		OBS	0078	0067	33362	2677				14514	730	070	078	010	067	008					
		STD	0100	0083	3355	2691	0011493		0133	14527	718										
		OBS	0104	0085	33575	2693				14529	716	084	098	010	082	010					
014		STD	0125	0088	3361	2696	0011070		0161	14534	699										
		STD	0150	0092	3368	2701	0010564		0188	14541	686										
		OBS	0155	0093	33702	2703				14543	684	091	106	010	092	009					
014		OBS	0192	0127	33864	2714				14566	678	136	153	010	098	010					
		STD	0200	0163	3400	2722	0008631		0236	14586	665										
		OBS	T0223	0241	34278	2738				14627	637	099	107	008	129	010					
014		STD	0250	0249	3430	2739	0007065		0275	14636	637										
		OBS	T0286	0259	34332	2741				14646	636	103	112	008	128	011					

REFERENCE		SHIP CODE	LATITUDE °	LONGITUDE °	MARS SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER		
CTRY CODE	IO. NO.		1/10	1/10	10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA	TYPE	AMT		
31	549	EV	61174N	064464W	223	14	08	01	036	1965	LCE	9458	0265	02	20	2	2		X1	3	5	0050
			WATER		WIND		BARO- METER		AIR TEMP. °C		VIS	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS									
			COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB													
							20		509	081	039	039	7	08								
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ DYN. M $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO ₂ -N $\mu\text{g} - \text{dl/l}$	NO ₃ -N $\mu\text{g} - \text{dl/l}$	SiO ₄ -Si $\mu\text{g} - \text{dl/l}$	pH				
036		STD	0000	0003	3321	2668		0013660		0000	14469	745	085	102	012	065	008					
		OBS	0000	0003	33212	2668					14469	745										
		STD	0010	0002	3322	2669		0013608		0014	14471	745										
036		STD	0020	0001	3322	2670		0013556		0027	14472	745	087	098	012	063	008					
		OBS	0025	0001	33227	2670					14473	745										
		STD	0030	0001	3323	2670		0013528		0041	14474	743										
036		OBS	0048	0001	33228	2670					14477	741	085	098	011	063	008					
		STD	0050	0001	3322	2669		0013577		0068	14477	742										
		OBS	0071	0001	33179	2666					14480	745										
036		STD	0075	0002	3316	2664		0014032		0102	14481	744	092	101	013	062	009					
		OBS	0095	0003	33116	2661					14484	740										
		STD	0100	0001	3313	2662		0014249		0138	14484	740										
036		STD	0125	-0008	3321	2669		0013589		0173	14485	740	089	104	011	064	009					
		OBS	0141	-0014	33250	2672					14485	740										
		STD	0150	-0019	3326	2673		0013149		0206	14485	739										
036		OBS	T0186	-0030	33314	2678					14486	735	082	096	013	069	009					
		STD	0200	-0029	3333	2679		0012553		0270	14489	733										
		OBS	0235	-0016	33378	2683					14502	725										

REFERENCE CITY CODE	IO. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	ALONG SQUARE	MARS SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
						10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE		AMT
31	549	EV	60437N	066051W	223	06	08	01	100	1965	LCE	9459	0640	06	20	3	X		X1	3	7		0051
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB											
									16	510	075	050	044					10					
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ O. DYN. M. x 10 ³	SOUND VELOCITY		O ₂ ml/l	PO ₄ -P µg - dl/l	TOTAL-P µg - dl/l	NO ₂ -N µg - dl/l	NO ₃ -N µg - dl/l	SiO ₄ -Si µg - dl/l	pH				
100		STD	0000	0203	3149	2519		0027887		0000	14536		867										
		OBS	0000	0203	31492	2519					14536		867	052	077	004	004	003					
		STD	0010	0125	3208	2571		0022926		0025	14511		852										
100		STD	0020	0061	3255	2612		0018990		0046	14490		832										
		OBS	0025	0033	32742	2629					14481		819	060	085	009	024	004					
		STD	0030	0006	3286	2640		0016353		0064	14471		796										
100		STD	0050	-0057	3323	2673		0013252		0094	14450		733										
		OBS	0050	-0057	33230	2673					14450		733	084	104	010	068	009					
		STD	0075	-0040	3341	2686		0011966		0125	14465		718										
100		OBS	0075	-0040	33406	2686					14465		718	095	110	012	074	009					
		STD	0100	-0043	3346	2690		0011548		0155	14468		707										
		OBS	0100	-0043	33458	2690					14468		707	097	114	011	075	010					
100		STD	0125	-0025	3357	2699		0010766		0182	14482		687										
		OBS	0141	-0014	33632	2703					14491		678	103	112	012	096	012					
		STD	0150	-0009	3365	2704		0010226		0209	14495		676										
100		STD	0200	0023	3374	2710		0009707		0259	14519		665										
		OBS	0200	0023	33739	2710					14519		665	106	118	011	106	013					
		STD	0250	0057	3383	2715		0009210		0306	14544		662										
100		STD	0300	0098	3395	2722		0008583		0350	14572		655										
		OBS	T0300	0098	33948	2722					14572		655	104	110	012	119	012					
		STD	0400	0201	3423	2738		0007264		0430	14639		632										
100		OBS	T0402	0202	34236	2738					14639		631	103	109	004	129	012					
		STD	0500	0216	3426	2739		0007181		0502	14662		627										
		STD	0600	0231	3429	2740		0007141		0573	14686		623										
100		OBS	T0602	0231	34294	2740					14686		623	115	121	002	138	012					

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH INDICATOR	MARSDEN SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.						10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR	HGT	PER		SEA	TYPE	
31	549	EV	60378N	065511W	223	05 08 01	114	1965	LCE	9460		0338	03	13	2	2			X1	3	6		0052
		WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS												
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB																		
					13	508	064			8	09												
MESSAGE TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SIO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S C						
114		STD	0000	0102	3208	2572	0022826	0000	14499	826													
114		OBS	0000	0102	32076	2572			14499	826													
114		OBS	0008	0088	32088	2574			14494	770	064	089	006	026	005								
		STD	0010	0079	3213	2578	0022288	0023	14491	780													
		STD	0020	0031	3237	2599	0020206	0044	14474	806													
114		OBS	0020	0031	32371	2599			14474	806	073	096	006	039	007								
		STD	0030	-0033	3274	2632	0017103	0062	14451	769													
114		OBS	0040	-0074	32978	2653			14437	745	094	106	008	064	010								
		STD	0050	-0081	3301	2656	0014847	0094	14436	740													
114		OBS	0061	-0086	33057	2660			14436	735	103	123	007	071	012								
		STD	0075	-0090	3312	2665	0013962	0130	14438	731													
114		OBS	0081	-0091	33141	2667			14438	730	101	113	008	077	010								
		STD	0100	0011	3319	2666	0013840	0165	14489	727													
114		OBS	T0120	0095	33238	2666			14531	723	108	131	009	077	011								
		STD	0125	0093	3324	2666	0013905	0200	14531	722													
		STD	0150	0080	3327	2669	0013599	0234	14530	718													
114		OBS	0165		33307				714	101	110	008	084	011									
		STD	0200	0054	3343	2683	0012230	0299	14529	702													
		STD	0250	0029	3369	2706	0010104	0355	14529	678													
114		OBS	T0253	0027	33713	2708			14529	676	109	112	010	102	013								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH INDIC	MARSDEN SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER						
CTRY CODE	ID. NO.						10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT	PER		SEA	TYPE		AMT					
31	549	EV	60308N	065344W	223	05	08	01	132	1965	LCE	9461	0421	04	13	2	2			X1	3	7	0053						
							WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS													
							COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB																
							14	512	064	061	044	8	10																
MESSAGE TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S C												
132	STD	0000	0158	3145	2518	0027934	0000	14515	865																				
	OBS	0000	0158	31448	2518			14515	865																				
	STD	0010	0054	3210	2576	0022389	0025	14479	827	661	082	007	010	004															
132	STD	0020	-0020	3258	2619	0018384	0046	14453	797																				
	OBS	0024	-0041	32729	2631			14446	787	073	088	008	037	005															
	STD	0030	-0049	3285	2642	0016199	0063	14445	777																				
132	OBS	0046	-0068	33074	2660			14442	754	084	099	009	046	007															
	STD	0050	-0072	3309	2662	0014267	0093	14441	752																				
	132	OBS	0059	-0084	33180	2670			14440	735	087	100	009	063	008														
132	STD	0075	-0083	3324	2674	0013067	0127	14442	724																				
	OBS	0092	-0081	33372	2685			14448	702	104	133	011	082	011															
	STD	0100	-0079	3339	2686	0011924	0159	14451	701																				
132	STD	0125	-0072	3344	2690	0011557	0188	14459	698																				
	OBS	0138	-0068	33468	2692			14463	696	104	112	012	092	012															
	STD	0150	-0050	3350	2694	0011179	0216	14474	694																				
132	OBS	T0185	-0002	33611	2701			14503	686	102	107	012	092	012															
	STD	0200	0023	3370	2707	0010003	0269	14518	681																				
	STD	0250	0078	3389	2719	0008887	0317	14554	666																				
132	OBS	T0256	0082	33907	2720			14557	664	102	113	011	106	012															
132	OBS	T0276	0089	33930	2721			14564	658	095	109	009	104	010															
	STD	0300	0096	3395	2723	0008554	0360	14572	653																				
132	OBS	T0380	0109	33993	2725			14591	653	100	112	008	109	012															

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS DEN SQUARE	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
					10°	1°		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	

31	549	EV	60244N	065188W	223	05	08	01	148	1965	LCE	9462		0251	02	00	0	X		X1	3	6			0054
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WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		12	512	037	083	061	8	07	

MESSAGE TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g \cdot dl/l$	TOTAL-P $\mu g \cdot dl/l$	NO ₃ -N $\mu g \cdot dl/l$	NO ₃ -N $\mu g \cdot dl/l$	SiO ₄ -Si $\mu g \cdot dl/l$	pH	S C
		STD	0000	0055	3155	2533	0026566	0000	14470	865							
148		OBS	0000	0055	31554	2533			14470	865	059	081	005	011	004		
		STD	0010	0024	3162	2539	0025915	0026	14459	857							
		STD	0020	-0007	3175	2551	0024785	0052	14448	850							
148		OBS	0025	-0023	31837	2559			14443	846	077	098	008	027	005		
		STD	0030	-0048	3200	2573	0022710	0075	14434	822							
		STD	0050	-0105	3256	2620	0018217	0116	14419	752							
148		OBS	0051	-0106	32584	2622			14419	750	092	124	011	057	009		
		STD	0075	-0071	3304	2658	0014641	0157	14445	726							
148		OBS	0076	-0070	33053	2659			14446	725	102	108	012	076	011		
		STD	0100	-0051	3312	2663	0014096	0193	14460	722							
148		OBS	0101	-0050	33125	2664			14461	722	092	107	012	078	010		
		STD	0125	-0032	3325	2673	0013174	0227	14475	714							
		STD	0150	-0015	3336	2681	0012406	0259	14488	696							
148		OBS	T0151	-0014	33365	2682			14489	695	105	110	013	090	011		
		STD	0200	0016	3355	2695	0011105	0318	14513	629							
148		OBS	T0227	0031	33639	2701			14526	576	103	111	011	099	012		

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS DEN SQUARE	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
					10°	1°		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	

31	549	EV	60194N	065094W	223	05	08	01	165	1965	LCE	9463		0256	02	00	0	X		X1	3	3			0055
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WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. mm	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		19	510	037	128	094	8	06	

MESSAGE TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g \cdot dl/l$	TOTAL-P $\mu g \cdot dl/l$	NO ₃ -N $\mu g \cdot dl/l$	NO ₃ -N $\mu g \cdot dl/l$	SiO ₄ -Si $\mu g \cdot dl/l$	pH	S C
165		STD	0000	0083	3010	2415	0037800	0000	14463	848							
		OBS	0000	0083	30101	2415			14463	848	064	095	005	007	005		
		STD	0010	0051	3038	2439	0035516	0037	14454	867							
		STD	0020	0022	3070	2466	0032938	0071	14447	886							
165		OBS	0025	0008	30886	2481			14444	895	059	104	003	001	003		
		STD	0030	-0008	3116	2504	0029291	0102	14441	873							
		STD	0050	-0054	3198	2571	0022844	0154	14434	803							
165		OBS	0050	-0054	31978	2571			14434	803	073	112	008	098	006		
		STD	0075	-0062	3230	2598	0020336	0208	14439	760							
165		OBS	0078	-0063	32347	2602			14440	755	087	106	010	047	008		
		STD	0100	-0026	3290	2645	0015881	0253	14468	726							
		STD	0125	0002	3332	2677	0012800	0289	14491	704							
165		OBS	T0126	0003	33329	2678			14492		101	115	012	100	011		
		STD	0150	0006	3337	2681	0012418	0321	14498	691							
165		OBS	T0179	0010	33425	2685			14505	690	078	098	007	035	006		

REFERENCE		SHIP CODE	LATITUDE ° ' 10"	LONGITUDE ° ' 10"	DEPTH METER	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1'	MO DAY HR.1/10	CRUISE NO.	STATION NUMBER		DIR.	HGT			PER SEA	TYPE	AMT				
31	549					EV	61367N	06000 W	223	10		08	02			201	1965	LCE		9464	1719	
		WATER		WIND		BARO- METER (mbal)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
COLOR CODE	TRANS. UNIT	DIR.	SPEED OF FORCE	DRY BULB	WET BULB																	
		28	S10	078	067	061	8	12														
MESSAGE TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10 ³	S Δ D DYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - ml/l	TOTAL-P μg - ml/l	NO ₃ -N μg - ml/l	NO ₃ -N μg - ml/l	SiO ₄ -Si μg - ml/l	pH	S C					
	201	STD	0000	0676	3344	2624	0017854	0000	14761	676												
		OBS	0000	0676	33437	2624			14761	676	019	037	002	000	001							
		STD	0010	0659	3356	2636	0016735	0017	14757	693												
		STD	0020	0623	3371	2653	0015183	0033	14746	703												
	201	OBS	0028	0581	33839	2668			14732	706	028	049	004	010	002							
		STD	0030	0554	3389	2675	0013032	0047	14722	705												
		STD	0050	0371	3430	2728	0008046	0068	14655	689												
	201	OBS	0055	0349	34383	2737			14648	683	088	098	032	092	006							
		STD	0075	0393	3463	2752	0005801	0086	14673	649												
	201	OBS	0083	0405	34693	2756			14680	640	101	109	046	096	008							
		STD	0100	0416	3474	2758	0005232	0100	14688	633												
	201	OBS	0110	0423	34761	2759			14693	630	100	113	003	142	007							
		STD	0125	0440	3478	2759	0005209	0113	14703	630												
		STD	0150	0462	3481	2759	0005249	0126	14717	629												
	201	OBS	0166	0472	34823	2759			14724	629	105	115	002	153	009							
		STD	0200	0479	3485	2760	0005195	0152	14732	635												
	201	OBS	T0224	0483	34873	2762			14738	638	104	109	001	152	009							
		STD	0250	0480	3488	2762	0005077	0177	14741	636												
		STD	0300	0474	3488	2763	0005043	0203	14747	634												
		STD	0400	0462	3488	2765	0004979	0253	14759	629												
	201	OBS	T0443	0456	34886	2766			14764	627	107	113	003	149	010							
		STD	0500	0448	3489	2767	0004873	0302	14770	625												
		STD	0600	0433	3490	2769	0004729	0350	14780	623												
	201	OBS	T0662	0425	34905	2771			14787	621	111	118	000	164	010							
		STD	0700	0420	3491	2771	0004640	0397	14791	620												
		STD	0800	0407	3490	2772	0004599	0443	14803	618												
	201	OBS	T0879	0397	34902	2773			14812	616	107	117	001	164	011							
		STD	0900	0394	3490	2773	0004561	0489	14814	617												
		STD	1000	0383	3490	2775	0004520	0534	14826	623												
		STD	1100	0374	3490	2776	0004499	0579	14839	629												
	201	OBS	T1117	0373	34899	2776			14841	630	112	117	003	134	011							
		STD	1200	0367	3490	2776	0004522	0625	14853	629												
		STD	1300	0363	3490	2776	0004570	0670	14868	624												
	201	OBS	T1320	0362	34894	2776			14871	623	113	121	002	166	011							

REFERENCE		SHIP CODE	LATITUDE ° ' 10	LONGITUDE ° ' 10	DEPTH METER	MARDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.						10"	1'	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT PER SEA	TYPE		AMT			
31	549	EV	6137 N	060383W	223	10	08	02	228	1965	LCE	9465	0538	05	13	3	X		X2	7	8	0057
		WATER		WIND		BARO- METER (mbal)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
COLOR CODE	TRANS. UNIT	DIR.	SPEED OF FORCE	DRY BULB	WET BULB																	
		24	S08	766	072		061	8					10									
MESSAGE TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10 ³	S Δ D DYN. M. X 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - ml/l	TOTAL-P μg - ml/l	NO ₃ -N μg - ml/l	NO ₃ -N μg - ml/l	SiO ₄ -Si μg - ml/l	pH	S C					
	228	STD	0000	0523	3324	2628	0017530	0000	14696	707												
		OBS	0000	0523	33239	2628			14696	707												
		STD	0010	0333	3334	2655	0014903	0016	14619	743												
		STD	0020	0178	3342	2675	0013083	0030	14555	766												
	228	OBS	0026	0102	33464	2683			14522	774												
		STD	0030	0055	3347	2687	0011946	0043	14502	773												
		STD	0050	-0075	3355	2699	0010736	0065	14446	755												
	228	OBS	0052	-0079	33565	2700			14445	752												
		STD	0075	0021	3378	2713	0009400	0091	14498	700												
	228	OBS	0078	0031	33803	2715			14503	694												
		STD	0100	0081	3394	2723	0008519	0113	14532	662												
	228	OBS	0104	0097	33975	2725			14540	657												
		STD	0125	0297	3434	2738	0007118	0133	14636	637												
		STD	0150	0453	3463	2746	0006499	0150	14710	621												
	228	OBS	0155	0474	34668	2746			14721	619												
		STD	0200	0490	3474	2750	0006141	0181	14736	615												
	228	OBS	T0204	0491	34744	2750			14737	615												
		STD	0250	0500	3480	2754	0005866	0211	14749	612												
		STD	0300	0510	3484	2756	0005742	0240	14761	608												
	228	OBS	T0306	0511	34844	2756			14763	608												
		STD	0400	0481	3487	2762	0005297	0295	14767	610												
	228	OBS	T0409	0476	34871	2762			14766	610												
		STD	0500	0413	3483	2766	0004921	0346	14754	591												
	228	OBS	T0533	0383	34794	2766			14747	580												

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
						10"	1"	MO	DAY		CRUISE NO.	STATION NUMBER			DIR	HGT	PER				

WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	(mb)	DRY BULB	WET BULB				
		26	S10	122	061	050	8	11		

MESSAGE TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta \rho$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	CTD
		STD	0000	0528	3326	2629	0017405	0000	14699	706							
	014	OBS	0000	0528	33263	2629			14699	706	018	031	003	000	001		
		STD	0010	0516	3326	2630	0017314	0017	14695	717							
	014	OBS	0010	0516	33259	2630			14695	717	039	076	000	000	001		
		STD	0020	0488	3328	2635	0016866	0034	14686	723							
	014	OBS	0025	0460	33291	2639			14675	728	018	036	001	002	002		
		STD	0030	0390	3332	2648	0015589	0051	14647	737							
		STD	0050	0164	3345	2678	0012766	0079	14554	771							
	014	OBS	0051	0155	33460	2679			14550	773	032	051	006	021	001		
		STD	0075	0001	3364	2703	0010367	0108	14487	735							
	014	OBS	0076	-0001	33652	2704			14486	733	073	087	015	076	004		
		STD	0100	0055	3382	2715	0009278	0133	14518	698							
	014	OBS	0102	0061	33832	2715			14521	695	085	096	021	103	006		
		STD	0125	0181	3407	2726	0008211	0154	14582	667							
		STD	0150	0288	3429	2735	0007432	0174	14636	644							
	014	OBS	0152	0296	34304	2736			14640	642	092	099	016	132	008		
		STD	0200	0430	3460	2746	0006528	0209	14709	620							
	014	OBS	T0203	0436	34612	2746			14712	619	094	102	000	142	008		
		STD	0250	0464	3474	2753	0005899	0240	14733	614							
		STD	0300	0493	3482	2756	0005692	0269	14754	609							
	014	OBS	T0302	0494	34822	2756			14755	609	103	112	000	151	009		
		STD	0400	0433	3483	2764	0005068	0323	14746	587							
	014	OBS	T0406	0431	34827	2764			14746	586							
		STD	0500	0428	3482	2764	0005130	0374	14760	576							
	014	OBS	0568	0425	34821	2764			14770	576							

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
						10"	1"	MO	DAY		CRUISE NO.	STATION NUMBER			DIR	HGT	PER				

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		25	S08	112	044	044	8	09	

MESSAGE TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta \rho$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	CTD
		STD	0000	0368	3332	2650	0015377	0000	14632	745							
	040	OBS	0000	0368	33318	2650			14632	745	030	049	004	010	002		
		STD	0010	0341	3335	2655	0014899	0015	14623	747							
		STD	0020	0306	3338	2661	0014359	0030	14610	748							
	040	OBS	0025	0286	33398	2664			14602	749	038	054	006	020	003		
		STD	0030	0248	3351	2676	0012922	0043	14588	737							
		STD	0050	0158	3385	2711	0009676	0066	14557	700							
	040	OBS	0050	0158	33852	2711			14557	700	071	083	027	070	006		
	040	OBS	0074	0186	34018	2722			14575	679	080	088	029	090	006		
		STD	0075	0187	3402	2722	0008619	0089	14576	679							
		STD	0100	0221	3413	2728	0008053	0110	14596	665							
	040	OBS	T0103	0225	34147	2729			14599	663	090	102	028	112	007		
		STD	0125	0325	3438	2739	0007071	0129	14649	641							
	040	OBS	0148	0388	34545	2746			14682	627	097	110	001	132	008		
		STD	0150	0388	3455	2746	0006421	0145	14682	627							
	040	OBS	T0198	0382	34599	2751			14688	625	099	103	001	144	009		
		STD	0200	0383	3460	2751	0006040	0177	14689	624							
		STD	0250	0403	3470	2757	0005543	0206	14707	613							
		STD	0300	0417	3477	2761	0005217	0232	14722	604							
	040	OBS	T0386	0432	34837	2764			14743	595							
		STD	0400	0432	3483	2764	0004999	0284	14746	595							
		STD	0500	0428	3481	2763	0005206	0335	14760	597							
	040	OBS	0517	0427	34810	2763			14763	597							

REFERENCE		SHIP CODE	LATITUDE 1:10	LONGITUDE 1:10	DEPTH IN METERS	MARSEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		HYDRO- STATION NUMBER
CRUISE CODE	ID. NO.					10"	1"	MO DAY HR 1/10	CRUISE NO.	STATION NUMBER		DIR	HGT			PER	SEA	TYPE		AMT		
31	549	EV	61377N	062384W	223	12	08	03	070	1965	LCE	9468	0594	05	13	4	2		X1	3	1	0060
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS				
						COLOR CODE	TRANS (m)	DIR	SPEED OF FORCE	(mbal)		DRY BULB	WET BULB									
									23	S04	125	044	039	8	11							
MESSAGE TIME HR 1:10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY		O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{at}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{at}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{at}^{-1}$	SIO ₄ -Si $\mu\text{g} \cdot \text{at}^{-1}$	pH	S T		
		STD	0000	0394	3331	2647		0015702		0000	14643		749									
	070	OBS	0000	0394	33307	2647					14643		749	027	049	003	005	003				
		STD	0010	0394	3330	2647		0015747		0016	14645		754									
	070	OBS	0010	0394	33302	2647					14645		754	030	049	004	005	003				
		STD	0020	0377	3331	2649		0015534		0031	14639		754									
	070	OBS	0023	0368	33321	2651					14636		754	027	046	004	005	003				
		STD	0030	0331	3334	2656		0014898		0047	14622		752									
	070	OBS	0045	0257	33403	2667					14593		745	034	045	004	014	003				
		STD	0050	0230	3345	2673		0013245		0075	14583		742									
	070	OBS	0067	0163	33593	2690					14558		729	056	072	013	041	004				
		STD	0075	0147	3366	2696		0011063		0105	14553		721									
	070	OBS	0090	0133	33782	2707					14551		706	069	090	020	064	005				
		STD	0100	0138	3387	2713		0009415		0131	14556		692									
		STD	0125	0179	3411	2730		0007894		0152	14582		663									
	070	OBS	0134	0204	34192	2734					14595		655	091	102	034	105	008				
		STD	0150	0293	3439	2743		0006723		0171	14640		646									
	070	OBS	T0179	0413	34650	2752					14699		632	093	101	000	130	007				
		STD	0200	0427	3468	2752		0005897		0202	14709		629									
		STD	0250	0449	3475	2756		0005663		0231	14727		621									
	070	OBS	T0270	0452	34769	2757					14732		618	097	102	004	129	008				
		STD	0300	0444	3479	2759		0005362		0259	14734		612									
	070	OBS	T0366	0429	34832	2764					14739		603									
		STD	0400	0424	3483	2765		0004930		0310	14742		600									
		STD	0500	0417	3483	2765		0004966		0360	14756		598									
	070	OBS	T0504	0417	34830	2765					14757		598									

REFERENCE		SHIP CODE	LATITUDE 1:10	LONGITUDE 1:10	DEPTH NO. 1	MARSSEN SQUARE		STATION TIME IGMT			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NO.00 STATION NUMBER	
CRUISE CODE	ID. NO.					10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE		AMT
31	549					EV	6138 N	063176W	223	13		08	03			091	1965	LCE		9469	0531		05
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS									
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB	DRY BULB	WET BULB	DRY BULB	WET BULB	DRY BULB	WET BULB	DRY BULB	WET BULB	DRY BULB	WET BULB	DRY BULB	WET BULB		
						22	S05	125	100	078	8	10											
MESSAGE TIME HR 1:10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{at}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{at}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{at}^{-1}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at}^{-1}$	pH	S C						
		STD	0000	0393	3330	2646	0015776	0000	14643	748													
091		OBS	0000	0393	33296	2646			14643	748	025	045	003	003	002								
		STD	0010	0307	3337	2660	0014453	0015	14609	746													
		STD	0020	0238	3346	2673	0013219	0029	14582	742													
091		OBS	0027	0199	33520	2681			14566	737	047	060	010	033	004								
		STD	0030	0185	3355	2684	0012149	0042	14561	734													
		STD	0050	0130	3374	2704	0010339	0064	14543	713													
091		OBS	0053	0127	33769	2706			14542	710	072	081	020	061	005								
		STD	0075	0151	3399	2722	0008588	0088	14559	684													
091		OBS	0080	0162	34034	2725			14566	679	084	091	032	095	006								
		STD	0100	0230	3422	2735	0007444	0108	14602	658													
091		OBS	0106	0250	34276	2737			14612	653	090	095	032	115	007								
		STD	0125	0328	3444	2743	0006647	0125	14651	640													
		STD	0150	0402	3459	2748	0006262	0142	14689	629													
091		OBS	0160	0422	34638	2750			14699	626	096	105	000	139	008								
		STD	0200	0438	3470	2753	0005865	0172	14713	627													
091		OBS	0213	0441	34721	2754			14717	627	098	105	001	144	008								
		STD	0250	0441	3476	2757	0005501	0200	14724	610													
		STD	0300	0441	3480	2760	0005254	0227	14733	594													
091		OBS	T0318	0441	34808	2761			14736	590	111	115	005	157	011								
		STD	0400	0440	3482	2762	0005193	0279	14749	590													
091		OBS	T0424	0439	34828	2763			14753	590													
		STD	0500	0440	3483	2763	0005224	0332	14765	591													
091		OBS	0531	0440	34836	2763			14771	591													

REFERENCE		SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	DEPTH METER	MARSSEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CRUISE CODE	ID. NO.						10"	1"	MO		DAY	HR. 1/10			CRUISE NO.	STATION NUMBER	DIR		HGT	PER		SEA
31	549	EV	61374N	06355 W	223	13	08	03	118	1965	LCE	9470	0430	04	13	2	4		X1	2	2	0062
WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS													
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB																
		21	S11		129	044					039	8	09									
MESSAGE TIME HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}^t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - dl/l$	TOTAL-P $\mu g - dl/l$	NO ₃ -N $\mu g - dl/l$	NO ₃ -N $\mu g - dl/l$	SiO ₄ -Si $\mu g - dl/l$	pH	S C					
118		STD	0000	0411	3309	2628	0017507	0000	14648	733												
		OBS	0000	0411	33089	2628			14648	733												
		STD	0010	0404	3310	2630	0017359	0017	14646	737												
		STD	0020	0396	3314	2633	0016994	0035	14645	740												
118		OBS	0028	0390	33181	2637			14644	743												
		STD	0030	0353	3319	2642	0016226	0051	14629	741												
		STD	0050	0094	3338	2677	0012851	0080	14521	719												
118		OBS	0054	0065	33424	2682			14510	715												
		STD	0075	0065	3377	2710	0009716	0109	14518	697												
118		OBS	0080	0065	33822	2714			14519	693												
		STD	0100	0086	3389	2718	0008929	0132	14533	680												
118		OBS	0106	0100	33921	2720			14541	676												
		STD	0125	0227	3418	2732	0007734	0153	14604	656												
		STD	0150	0347	3442	2740	0006995	0171	14663	634												
118		OBS	0160	0380	34495	2743			14680	626												
		STD	0200	0405	3459	2748	0006340	0204	14698	602												
118		OBS	T0213	0410	34609	2749			14703	596												
		STD	0250	0410	3465	2752	0005991	0235	14709	588												
		STD	0300	0410	3469	2755	0005740	0265	14718	581												
118		OBS	T0318	0410	34698	2756			14721	579												
		STD	0400	0412	3473	2758	0005559	0321	14736	577												
118		OBS	T0422	0413	34730	2758			14740	577												

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARSSEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER			
					CRUISE NO.	STATION NUMBER	DIR		HGT	PER			SEA	TYPE	AMT								
31	549	EV	61379N	064311W	223	14	08	03	140	1965	LCE	9471	0095	01	13	1	4		X1	0	4		0063
WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS														
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB																	
				22	S11	119	028	022	8	05													
MESSING TIME OF HR 1/10	CAS T NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}^t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - dl/l$	TOTAL-P $\mu g - dl/l$	NO ₂ -N $\mu g - dl/l$	NO ₃ -N $\mu g - dl/l$	SiO ₄ -Si $\mu g - dl/l$	pH	S						
140		STD	0000	0184	3305	2644	0015958	0000	14549	756													
		OBS	0000	0184	33046	2644			14549	756	069	081	006	004	006								
		STD	0010	0110	3311	2654	0014999	0015	14518	748													
		STD	0020	0056	3316	2662	0014314	0030	14496	741													
140		OBS	0025	0036	33190	2665			14488	738	084	096	008	058	008								
		STD	0030	0029	3322	2668	0013716	0044	14486	735													
		STD	0050	0012	3329	2674	0013118	0071	14483	729													
140		OBS	0050	0012	33287	2674			14483	729	086	103	009	068	008								
140		OBS	0070	0014	33286	2674			14487	729	087	095	013	065	008								
		STD	0075	0013	3329	2674	0013094	0104	14488	729													
140		OBS	0080	0012	33290	2674			14488	729	087	097	009	064	008								

REFERENCE		SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	DEPTH METER	MARSSEN SQUARE	STATION TIME IGMT			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CRUISE CODE	ID. NO.						10"	1"	MO		DAY	HR. 1/10			CRUISE NO.	STATION NUMBER	DIR		HGT	PER		SEA
31	549	EV	61492N	064329W	223	14	08	03	167	1965	LCE	9472	0274	02	21	2	2		X1	3	2	0064
WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS													
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB																
		18	S12	102	089	067	8	07														
MESSAGE TIME HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}^t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g - dl/l$	TOTAL-P $\mu g - dl/l$	NO ₃ -N $\mu g - dl/l$	NO ₃ -N $\mu g - dl/l$	SiO ₄ -Si $\mu g - dl/l$	pH	S C					
167		STD	0000	0201	3283	2626	0017700	0000	14553	763												
		OBS	0000	0201	32832	2626			14553	763												
		STD	0010	0175	3287	2631	0017235	0017	14544	762												
167		STD	0020	0150	3291	2636	0016768	0034	14535	761												
		OBS	0025	0138	32931	2638			14531	760												
		STD	0030	0132	3294	2639	0016426	0051	14529	758												
167		STD	0050	0086	3301	2648	0015618	0083	14513	751												
		OBS	0051	0083	33015	2648			14512	751												
		STD	0075	-0017	3318	2667	0013792	0120	14472	742												
167		OBS	0076	-0020	33194	2668			14471	741												
		STD	0100	-0085	3350	2695	0011059	0151	14449	716												
		OBS	0102	-0088	33519	2697			14449	714												
167		STD	0125	-0047	3366	2707	0009980	0177	14473	698												
		STD	0150	-0008	3377	2714	0009317	0201	14497	685												
		OBS	0152	-0005	33782	2715			14499	684												
167		STD	0200	0055	3390	2721	0008668	0246	14536	669												
		OBS	0203	0058	33903	2721			14538	668												

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH IN METERS	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CRUISE CODE	ID. NO.						10"	1"	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			CH	HGT PER	SEA		TYPE	AMT		
31	549	EV	6158 N	064308W	223	14	08	03	183	1965	LCE	9473	0293	02	19	0	2		X1	0	4	0065
		WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB																	
			18	S12	112		058	044	8	06												
MESSNGR TIME OF HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g \cdot dl^{-1}$	TOTAL-P $\mu g \cdot dl^{-1}$	NO ₂ -N $\mu g \cdot dl^{-1}$	NO ₃ -N $\mu g \cdot dl^{-1}$	SiO ₄ -Si $\mu g \cdot dl^{-1}$	pH	DATE					
		STD	0000	0222	3238	2588	0021308	0000	14556	809												
	183	OBS	0000	0222	32376	2588			14556	809	058	087	002	006	003							
		STD	0010	0209	3258	2605	0019670	0020	14555	786												
		STD	0020	0197	3274	2619	0018374	0040	14554	767												
	183	OBS	0025	0191	32813	2625			14553	760	100	164	005	021	006							
		STD	0030	0185	3285	2628	0017458	0057	14552	755												
		STD	0050	0161	3303	2644	0015970	0091	14547	740												
	183	OBS	0050	0161	33025	2644			14547	740	082	097	008	050	007							
		STD	0075	-0085	3328	2678	0012738	0127	14442	727												
	183	OBS	0075	-0085	33282	2678			14442	727	093	107	011	071	010							
		STD	0100	-0071	3347	2692	0011342	0157	14455	711												
		STD	0125	-0057	3361	2703	0010350	0184	14468	699												
	183	OBS	0125	-0057	33606	2703			14468	699	096	103	010	095	010							
		STD	0150	-0042	3368	2708	0009842	0209	14480	691												
	183	OBS	0175	-0027	33703	2709			14491	688	099	107	010	098	010							

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH IN METERS	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CRUISE CODE	ID. NO.						10"	1"	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT PER	SEA		TYPE	AMT		
31	549	EV	6203 N	064294W	223	24	08	03	193	1965	LCE	9474	0293	03	17	0	2		X2	3	8	0066
		WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB																	
			16	S10	105	083	061	8	08													
MESSNGR TIME OF HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - σ _t /l	TOTAL-P μg - σ _t /l	NO ₂ -N μg - σ _t /l	NO ₃ -N μg - σ _t /l	SiO ₄ -Si μg - σ _t /l	pH	S CODE					
		STD	0000	0204	3233	2586	0021507	0000	14548	817												
	193	OBS	0000	0204	32333	2586			14548	817	056	085	001	045	002							
		STD	0010	0113	3253	2608	0019430	0020	14512	803												
		STD	0020	0036	3272	2627	0017567	0039	14481	787												
	193	OBS	0025	0003	32810	2636			14468	779	073	088	009		006							
		STD	0030	-0030	3292	2646	0015739	0056	14455	767												
	193	OBS	0049	-0105	33239	2675			14428	734	094	106	009	073	010							
		STD	0050	-0104	3325	2676	0012932	0084	14429	733												
	193	OBS	0073	-0088	33435	2690			14443	717	094	101	010	088	010							
		STD	0075	-0087	3344	2691	0011522	0115	14443	716												
	193	OBS	0097	-0081	33517	2697			14451	709	097	110	012	036	010							
		STD	0100	-0080	3352	2697	0010925	0143	14452	708												
		STD	0125	-0075	3355	2699	0010704	0170	14459	705												
	193	OBS	0146	-0069	33577	2701			14465	702	094	108	010	086	010							
		STD	0150	-0068	3358	2701	0010493	0196	14467	702												
	193	OBS	T0194	-0054	33616	2704			14481	698	091	113	010	093	009							
		STD	0200	-0052	3362	2704	0010238	0248	14483	698												
		STD	0250	-0038	3366	2706	0009982	0299	14498	695												
	193	OBS	T0293	-0028	33700	2709			14511	695	096	098	016	099	010							

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH IN METERS	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CRUISE CODE	ID. NO.						10"	1"	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT PER	SEA		TYPE	AMT		
31	549	EV	62112N	064278W	223	24	08	03	209	1965	LCE	9475	0174	02	10	0	2		X1	3	6	0067
							WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
		COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB		WET BULB														
							15	S08	098	094	078	8	07									
MESSNGR TIME OF HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu g \cdot dl^{-1}$	TOTAL-P $\mu g \cdot dl^{-1}$	NO ₂ -N $\mu g \cdot dl^{-1}$	NO ₃ -N $\mu g \cdot dl^{-1}$	SIO ₄ -Si $\mu g \cdot dl^{-1}$	pH	DATE					
		STD	0000	0184	3250	2600	0020126	0000	14541	793												
	209	OBS	0000	0184	32497	2600			14541	793	063	088	006	015	003							
		STD	0010	0189	3256	2605	0019686	0020	14546	784												
		STD	0020	0195	3262	2609	0019269	0039	14551	777												
	209	OBS	0024	0197	32652	2612			14553	775	074	093	007	017	005							
		STD	0030	0143	3269	2619	0018395	0058	14531	775												
	209	OBS	0047	0023	32841	2638			14481	768	081	096	007	037	006							
		STD	0050	0008	3289	2642	0016128	0093	14476	765												
	209	OBS	0070	-0062	33119	2664			14450	745	090	101	011	059	008							
		STD	0075	-0065	3316	2667	0013746	0130	14450	740												
	209	OBS	0093	-0076	33260	2676			14449	727	088	098	011	072	008							
		STD	0100	-0080	3328	2677	0012760	0163	14449	727												
		STD	0125	-0091	3332	2681	0012401	0195	14448	725												
	209	OBS	T0141	-0094	33331	2682			14450	724	097	118	014	078	010							
		STD	0150	-0093	3333	2682	0012296	0226	14451	728												
	014	OBS	T0166	-0092	33332	2682			14455	738	095	104	012	074	010							

REFERENCE		SHIP CODE	LATITUDE 10°	LONGITUDE 1°10'	DRIFT INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10°	1°	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DR.	HGT	PER	SEA		TYPE	AMT	
31	549	EV	62155N	064282W		223	24	08	03	218	1965	LCE	9476	0121	01	11	1	2		X1	3 4		0068
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB											
									11	512	091	072	056	8	05								
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_{θ}		$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH						
218		STD	0000	0021	3235	2598	0020350		0000	14666	800												
		OBS	0000	0021	32347	2598				14666	800												
		STD	0010	0017	3242	2604	0019772		0020	14467	798												
		STD	0020	0014	3250	2611	0019141		0040	14468	796												
218		OBS	0025	0012	32545	2614				14468	795												
		STD	0030	-0016	3261	2621	0018167		0058	14457	784												
		STD	0050	-0084	3280	2639	0016460		0093	14432	754												
218		OBS	0050	-0084	32798	2639				14432	754												
		STD	0075	-0075	3292	2648	0015521		0133	14442	750												
218		OBS	0075	-0075	32923	2648				14442	750												
		STD	0100	-0076	3296	2652	0015214		0171	14446	749												
218		OBS	0100	-0076	32961	2652				14446	749												

REFERENCE		SHIP CODE	LATITUDE 10°	LONGITUDE 1°10'	DRIFT INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10°	1°	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT	
31	549	EV	63565N	063568W		223	33	08	04	106	1965	LCE	9477	0269	03	11	0	X		X1	3 7		0069
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB											
										16	510	068	036	033	8	09							
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY-σ _θ		Σ Δ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH					
106	STD	OBS	0000	0281	3170	2530		0026840		0000	14573	818											
		OBS	0000	0281	31704	2530					14573	818											
		STD	0010	0224	3197	2555		0024434		0026	14553	814											
		OBS	0010	0224	31966	2555					14553	814											
106	STD	OBS	0020	0182	3204	2564		0023585		0050	14537	820											
		OBS	0025	0156	32089	2570					14527	822											
		STD	0030	0112	3219	2580		0022010		0072	14510	821											
		STD	0050	-0029	3255	2617		0018563		0113	14454	814											
106	OBS	0051	-0035	32567	2618					14451	814												
		STD	0075	-0132	3290	2648		0015514		0156	14415	769											
		OBS	0076	-0134	32911	2649					14414	767											
		STD	0100	-0154	3307	2663		0014133		0193	14411	730											
106	OBS	0102	-0155	33082	2664					14411	728												
		STD	0125	-0134	3319	2672		0013252		0227	14426	707											
		STD	0150	-0120	3328	2679		0012592		0259	14438	694											
		OBS	0152	-0119	33290	2680					14439	693											
106	STD	0200	-0120	3342	2690		0011493		0319	14448	695												
		OBS	T0203	-0120	33430	2691					14449	695											
		STD	0250	-0112	3348	2695		0011035		0376	14461	687											
		OBS	T0254	-0111	33481	2695					14462	686											

REFERENCE		SHIP CODE	LATITUDE 10°	LONGITUDE 1°10'	DRIFT INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10°	1°	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
31	549	EV	63547N	063123W		223	33	08	04	132	1965	LCE	9478	0333	03	18	2	2		X1	3	7	0070	
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS									
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB												
									16	512	068	061	056	8	09									
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY-σ _t		Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH						
132		STD	0000	0490	3255	2577	0022330		0000	14673	725													
		OBS	0000	0490	32553	2577				14673	725													
		STD	0010	0381	3265	2596	0020540		0021	14631	762													
		STD	0020	0268	3276	2615	0018750		0041	14585	786													
132	OBS	STD	0025	0211	32808	2623				14562	793	066	098	003	002	004								
		STD	0030	0132	3287	2634	0016958		0059	14528	791													
		STD	0050	-0089	3309	2662	0014230		0090	14433	781													
132	OBS	STD	0050	-0089	33087	2662				14433	781	081	098	014	038	006								
		STD	0075	-0154	3328	2679	0012570		0124	14410	731													
132	OBS	STD	0075	-0154	33276	2679				14410	731	088	101	015	075	009								
		STD	0100	-0168	3340	2690	0011535		0154	14409	719													
132	OBS	STD	0100	-0168	33404	2690				14409	719	097	112	012	075	010								
		STD	0125	-0169	3344	2693	0011239		0182	14413	738													
		STD	0150	-0169	3349	2697	0010875		0210	14418	743													
132	OBS	STD	0150	-0169	33485	2697				14418	743	089	102	014	086	008								
		STD	0200	-0131	3358	2704	0010216		0263	14446	715													
132	OBS	STD	0200	-0131	33582	2704				14446	715	095	135	014	088	009								
		STD	0250	-0020	3380	2717	0009006		0311	14508	667													
		STD	0300	0034	3391	2723	0008470		0354	14543	641													
132	OBS	T0300	0034	33909	2723				14543	641	102			004	114	014								
132	OBS	T0325	0040	33923	2724				14550	636	119	143	003	120	015									

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DATE MO DAY	MARS SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER					
CTR CODE	ID. NO.					10'	1'	MO	DAY		HR./10	CRUISE NO.		STATION NUMBER	DIR	HGT		PER	SEA		TYPE	AMT			
31	549	EV	63545N	061005W	223	31	08	04	207	1965	LCE	9481	0256	02	13	2	3		X6	5	8		0073		
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS											
		COLOR CODE		TRANS. (m)		DIR.		SPEED OF FORCE		DRY BULB		WET BULB													
						10		508		054		067		061		8		09							
MESSAGE TIME OF HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH									
207		STD	0000	0517	3238	2560	0023922	0000	14682	725	058	075	000	000	002										
		OBS	0000	0517	32379	2560			14682	725															
		STD	0010	0498	3242	2566	0023431	0024	14677	724															
207		STD	0020	0479	3246	2571	0022951	0047	14671	723	062	084	003	000	004										
		OBS	0025	0470	32478	2573			14668	723															
		STD	0030	0309	3262	2600	0020145	0068	14603	732															
207		OBS	0049	-0095	33042	2659			14430	746	044	104	024	053	008										
		STD	0050	-0097	3305	2659	0014487	0103	14429	745															
		OBS	0073	-0133	33260	2678			14419	723															
207		STD	0075	-0136	3327	2678	0012666	0137	14418	721	100	110	010	070	011										
		OBS	0096	-0162	33350	2686			14410	705															
		STD	0100	-0161	3336	2686	0011891	0168	14412	705															
207		STD	0125	-0153	3346	2694	0011128	0196	14421	708	087	103	005	096	009										
		OBS	T0145	-0147	33546	2701			14428	710															
		STD	0150	-0136	3357	2703	0010321	0223	14435	704															
207		OBS	T0190	-0050	33776	2716			14484	663	095	101	002	110	011										
		STD	0200	-0020	3383	2719	0008790	0271	14501	657															
		OBS	0225	0027	33911	2724			14527	641															
207		STD	0250	0037	3392	2723	0008446	0314	14536	622	107	110	004	122	014										
		OBS	0250	0037	33915	2723			14536	622															
									14536	622															
207									14536	622	101	115	005	119	014										

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	GIFT INCH	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SAMPLE'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER					
CTRY CODE	ID. NO.					10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT				
31	549	EV	63542N	060157W	223	30	08	04	236	1965	LCE	9482	0439	04	08	1	2		X6	5	8	0074					
						WATER		WIND		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS													
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	BARO-METER	DRY BULB	WET BULB	VIS. CODE														
								06	509	034	058	056	7	10													
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _θ	Σ Δ σ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	S	C									
		STD	0000	0510	3229	2554	0024494	0000	14678	738																	
236		OBS	0000	0510	32293	2554			14678	738																	
		STD	0010	0442	3233	2565	0023500	0024	14652	743																	
236		OBS	0010	0442	32334	2565			14652	743																	
		STD	0020	0323	3243	2584	0021694	0047	14604	789																	
236		OBS	0026	0245	32509	2597			14573	803																	
		STD	0030	0160	3263	2613	0018960	0067	14537	791																	
		STD	0050	-0130	3307	2662	0014233	0100	14414	744																	
236		OBS	0052	-0147	33101	2665			14407	740																	
		STD	0075	-0161	3327	2679	0012598	0134	14406	708																	
236		OBS	0078	-0162	33292	2681			14407	706																	
		STD	0100	-0171	3338	2688	0011711	0164	14407	712																	
236		OBS	0104	-0172	33392	2689			14408	713																	
		STD	0125	-0168	3343	2692	0011317	0193	14413	720																	
		STD	0150	-0153	3349	2697	0010882	0221	14426	729																	
236		OBS	0155	-0148	33507	2698			14429	731																	
		STD	0200	-0086	3368	2710	0009635	0272	14468	669																	
236		OBS	T0206	-0075	33709	2712			14474	663																	
		STD	0250	0083	3405	2731	0007707	0315	14559	660																	
		STD	0300	0207	3434	2746	0006444	0351	14626	657																	
236		OBS	T0307	0220	34370	2747			14633	657																	
		STD	0400	0267	3455	2758	0005434	0410	14672	657																	
236		OBS	0414	0274	34578	2759			14678	657																	

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	GIFT INCH	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER			
CTRY CODE	ID. NO.					10°	1°	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	DIR.		HGT	PER		SEA	TYPE	AMT
31	549	EV	63539N	059289W	222	39	08	05	022	1965	LCE	9483	0615	05	10	1	2		X2	5	8	0075		
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. IMI	DIR.	SPEED OR FORCE	DRY BULB	WET BULB													
								11	508	007	067	067	6	11										
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10 ³	$\Sigma \Delta \sigma$ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P µg · at/l	TOTAL-P µg · at/l	NO ₂ -N µg · at/l	NO ₃ -N µg · at/l	SiO ₄ -Si µg · at/l	pH	S	C						
022		STD	0000	0540	3240	2560	0023982	0000	14692	711														
		OBS	0000	0540	32404	2560				14692	711													
		STD	0010	0452	3248	2575	0022538	0023	14658	733														
022		OBS	0010	0452	32475	2575			14658	733														
		STD	0020	0255	3297	2633	0017059	0043	14582	790														
022		OBS	0025	0170	33140	2653			14548	803														
		STD	0030	0089	3317	2660	0014419	0059	14513	778														
022		STD	0050	-0127	3327	2678	0012708	0086	14418	715														
		OBS	0051	-0133	33280	2679			14416	713														
		STD	0075	-0149	3342	2691	0011478	0116	14414	715														
022		OBS	0076	-0150	33429	2692			14414	715														
		STD	0100	-0152	3350	2697	0010842	0144	14418	722														
022		OBS	0102	-0152	33508	2698			14418	722														
		STD	0125	-0101	3363	2706	0009994	0170	14468	720														
		STD	0150	-0035	3378	2716	0009111	0194	14485	702														
022		OBS	0152	-0029	33795	2717			14488	700														
		STD	0200	0136	3411	2733	0007604	0236	14575	611														
022		OBS	0203	0146	34133	2734			14580	607														
		STD	0250	0325	3446	2745	0006561	0271	14671	603														
		STD	0300	0446	3469	2751	0006131	0303	14733	599														
022		OBS	T0307	0457	34717	2752			14739	598														
		STD	0400	0469	3483	2759	0005488	0361	14761	588														
022		OBS	T0403	0469	34828	2760			14762	587														
		STD	0500	0366	3475	2764	0005005	0413	14733	565														
022		OBS	T0509	0351	34738	2765			14728	562														

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH METER	MARS SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CIRY CODE	ID. NO.					10"	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR	HGT	PER		SEA	TYPE		AMT
31	549	EV	63538N	058442W	222	38	08	05	052	1965	LCE	9484	0768	07	13	4	2		X6	5	8		0076
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB												
									16	S20	003	078	078	6	11								
MESSAGE TIME OF HR. 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t		Σ Δ D OYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - dl/l	TOTAL-P μg - dl/l	NO ₃ -N μg - dl/l	NO ₃ -N μg - dl/l	SiO ₄ -Si μg - dl/l	pH	S C					
052		STD	0000	0654	3325	2612	0018991		0000	14749	683												
		OBS	0000	0654	33248	2612				14749	683												
		STD	0010	0590	3326	2621	0018142		0019	14725	732												
		STD	0020	0508	3331	2635	0016855		0036	14694	760												
052		OBS	0025	0460	33346	2643				14676	767												
		STD	0030	0369	3342	2658	0014638		0052	14639	757												
		STD	0050	0141	3367	2697	0010942		0077	14547	723												
052		OBS	0051	0135	33679	2698				14544	722												
		STD	0075	0162	3389	2713	0009422		0103	14563	696												
052		OBS	0076	0164	33898	2714				14564	695												
		STD	0100	0248	3410	2723	0008496		0125	14608	674												
		OBS	0102	0255	34118	2724				14611	673												
052		STD	0125	0328	3431	2733	0007625		0145	14649	663												
		STD	0150	0387	3448	2741	0006936		0164	14681	653												
		OBS	0152	0391	34487	2741				14683	652												
		STD	0200	0439	3468	2751	0006026		0196	14714	667												
052		OBS	0203	0442	34686	2751				14715	668												
		STD	0250	0480	3479	2755	0005711		0225	14740	642												
		STD	0300	0504	3487	2759	0005450		0253	14760	625												
052		OBS	0305	0505	34874	2759				14761	624												
		STD	0400	0495	3489	2762	0005313		0307	14773	625												
		OBS	0405	0494	34891	2762				14773	625												
052		STD	0500	0476	3490	2764	0005166		0359	14781	624												
		STD	0600	0457	3490	2767	0005015		0410	14790	623												
		OBS	T0607	0456	34900	2767				14791	623												
052		STD	0700	0299	3470	2767	0004829		0460	14737	546												
		OBS	T0725	0242	34631	2766				14716	517												

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INCHES	MARSSEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER		
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER				SEA	
31	549	EV	63536N	058000W		222	38	08	05	085	1965	LCE	9485	1130	10	13	5	2		X6	7 8		0077
						WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE			DRY BULB	WET BULB														
								16	S20	997	083	083	6	13									
MESSAGE TIME HR. 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t		Σ Δ σ OYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - dl/l	TOTAL-P μg - dl/l	NO ₃ -N μg - dl/l	NO ₃ -N μg - dl/l	SiO ₄ -Si μg - dl/l	pH						
085		STD	0000	0688	3334	2615	0018731		0000	14764	684												
		OBS	0000	0688	33340	2615				14764	684	010	037	001	000	001							
		STD	0010	0694	3337	2617	0018571		0019	14769	685												
085		STD	0020	0700	3341	2619	0018404		0037	14773	686												
		OBS	0021	0701	33412	2619				14774	686	015	041	000	000	001							
		STD	0030	0545	3368	2660	0014502		0054	14716	743												
085		OBS	0042	0404	33946	2697				14663	767	032		012	026	003							
		STD	0050	0367	3406	2709	0009814		0078	14650	722												
		OBS	0061	0340	34185	2722				14642	681	083	092	026	082	005							
085		STD	0075	0354	3429	2729	0007980		0100	14652	674												
		OBS	0081	0361	34338	2732				14657	670	085	104	038	104	007							
		STD	0100	0391	3446	2739	0007081		0119	14674	653												
085		OBS	0123	0421	34579	2745				14692	638	100	108	019	129	008							
		STD	0125	0423	3459	2746	0006455		0136	14693	638												
		STD	0150	0447	3467	2750	0006135		0152	14709	632												
085		OBS	0165	0460	34712	2751				14717	630	095	115	002	149	008							
		STD	0200	0475	3477	2754	0005748		0181	14730	631												
		STD	0250	0492	3483	2757	0005550		0210	14746	632												
085		STD	0300	0503	3488	2760	0005364		0237	14759	632												
		OBS	T0334	0507	34907	2761				14767	633	101	115	004	153	008							
		STD	0400	0498	3491	2763	0005200		0290	14774	633												
085		STD	0500	0484	3491	2764	0005149		0341	14785	633												
		OBS	0516	0482	34914	2765				14787	633	106	117	001	152	009							
		STD	0600	0470	3490	2765	0005147		0393	14796	631												
085		STD	0700	0456	3489	2766	0005183		0445	14806	629												
		OBS	0701	0456	34890	2766				14806	629	101	126	001	141	009							
		STD	0800	0435	3490	2769	0004956		0495	14814	624												
094		OBS	T0868	0427																			
085		STD	0900	0427	3491	2771	0004885		0544	14828	616												
		OBS	T0913	0424	34914	2771				14829	615	107	110	000	159	010							
		STD	1000	0350	3492	2779	0004013		0589	14812													
094		OBS	1000	0350	34916	2779				14812													

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	NODC STATION NUMBER	MARDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SPLS	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CITY CODE	ID. NO.					10"	1'	MO	DAY		HR./1/10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE
31	549	EV	64255N	057500W	222	47	08	05	138	1965	LCE	9486	0870	08	17	7	3		X2	7	8	0078
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS										
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB																	
			15	520	980	089	078	6	12													
MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ D DYN. M. $\times 10^2$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S C C					
		STD	0000	0689	3315	2600	0020185	0000	14762	674												
138		OBS	0000	0689	33147	2600			14762	674												
		STD	0010	0688	3315	2600	0020191	0020	14763	678												
138		OBS	0016	0688	33147	2600			14764	680												
		STD	0020	0547	3321	2623	0018035	0039	14709	719												
138		OBS	0027	0339	33314	2653			14624	770												
		STD	0030	0270	3333	2660	0014459	0056	14595	769												
		STD	0050	-0000	3351	2693	0011359	0081	14481	762												
138		OBS	0053	-0013	33540	2696			14475	761												
138		OBS	0069	0042	33743	2709			14506	696												
		STD	0075	0096	3384	2714	0009368	0107	14533	687												
138		OBS	0080	0133	33914	2717			14551	681												
		STD	0100	0189	3406	2725	0008338	0129	14581	661												
138		OBS	0106	0206	34103	2727			14590	657												
		STD	0125	0271	3419	2729	0008023	0150	14623	655												
		STD	0150	0345	3430	2731	0007878	0170	14661	651												
138		OBS	0160	0371	34337	2731			14674	649												
		STD	0200	0423	3453	2741	0006978	0207	14705	637												
		STD	0250	0472	3472	2751	0006144	0240	14736	622												
		STD	0300	0504	3485	2757	0005599	0269	14759	607												
138		OBS	T0319	0512	34878	2759			14766	601												
		STD	0400	0512	3490	2760	0005442	0324	14780	626												
138		OBS	T0420	0511	34904	2761			14783	630												
		STD	0500	0500	3490	2762	0005416	0379	14791	629												
		STD	0600	0476	3489	2764	0005313	0432	14798	627												
138		OBS	T0633	0465	34885	2765			14799	626												
		STD	0700	0439	3487	2766	0005125	0484	14799	615												
		STD	0800	0390	3485	2770	0004793	0534	14795	590												
138		OBS	T0844	0365	34834	2771			14791	576												

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	NODC STATION NUMBER	MARDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER		
CITY CODE	ID. NO.					10"	1'	MO	DAY		HR./1/10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE	AMT
31	549	EV	64395N	057480W	222	47	08	05	158	1965	LCE	9487	0753	06	17	5	2		X6	7	8	0079	
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	mbsl		DRY BULB	WET BULB														
								17		S12	970	078	078	6	12								
MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta$ D DYN. M. $\times 10^2$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH					
158		STD	0000	0678	3316	2602		0019941		0000	14758	669											
		OBS	0000	0678	33161	2602					14758	669											
		STD	0010	0673	3317	2603		0019859		0020	14757	675											
158		STD	0020	0668	3317	2604		0019777		0040	14757	682											
		OBS	0025	0665	33171	2605					14757	685											
		STD	0030	0547	3323	2624		0017896		0059	14711	736											
158		STD	0050	0165	3344	2677		0012864		0089	14554	808											
		OBS	0050	0165	33438	2677					14554	808											
		OBS	0065	-0028	33559	2698					14471	721											
158		STD	0075	0023	3366	2704		0010325		0118	14497	700											
		OBS	0075	0023	33660	2704					14497	700											
		OBS	0099	0085	33865	2716					14532	675											
158		STD	0100	0090	3388	2717		0009029		0142	14535	674											
		STD	0125	0197	3411	2728		0008029		0164	14590	653											
		OBS	0147	0280	34294	2736					14632	637											
158		STD	0150	0291	3432	2737		0007232		0183	14638	635											
		OBS	T0198	0435	34606	2746					14711	611											
		STD	0200	0439	3462	2746		0006475		0217	14713	611											
158		OBS	T0244	0515	34798	2752					14754	602											
		STD	0250	0514	3480	2752		0006029		0248	14754	601											
		STD	0300	0507	3482	2755		0005858		0278	14760	595											
158		OBS	T0369	0497	34853	2758					14768	592											
		STD	0400	0493	3486	2760		0005494		0335	14772	594											
		STD	0500	0481	3490	2764		0005212		0388	14784	602											
158		OBS	T0526	0478	34906	2765					14787	604											
		STD	0600	0410	3488	2770		0004605		0438	14770	592											
		OBS	0600	0410	34881	2770					14770	592											

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDIC	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER					
CITY CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT				
31	549	EV	64550N	057450W	222	47	08	05	179	1965	LCE	9488	0713	07	15	6	2		x6	7	8	0080					
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
						COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB																
									16	518	956	078	078	7	12												
MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DTN M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SIO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S C										
179		STD	0000	0664	3322	2609	0019324	0000	14753	673																	
		OBS	0000	0664	33220	2609			14753	673																	
		STD	0010	0659	3322	2610	0019255	0019	14752	675																	
		STD	0020	0653	3322	2611	0019186	0039	14752	677																	
179		OBS	0026	0650	33225	2611			14752	678																	
		STD	0030	0484	3327	2635	0016908	0057	14685	683																	
		STD	0050	-0074	3346	2692	0011428	0085	14446	708																	
179		OBS	0051	-0090	33465	2693			14438	709																	
		STD	0075	-0107	3356	2701	0010536	0112	14436	689																	
179		OBS	0077	-0108	33580	2703			14436	688																	
		STD	0100	0141	3387	2713	0009435	0137	14558	676																	
179		OBS	0102	0157	33888	2714			14565	675																	
		STD	0125	0191	3404	2723	0008513	0160	14586	661																	
		STD	0150	0246	3420	2732	0007750	0180	14617	646																	
179		OBS	0152	0251	34217	2733			14619	645																	
		STD	0200	0413	3454	2743	0006798	0216	14701	618																	
179		OBS	T0203	0420	34558	2744			14704	617																	
		STD	0250	0486	3473	2750	0006228	0249	14742	603																	
179		OBS	0281	0500	34789	2753			14754	599																	
		STD	0300	0496	3480	2754	0005878	0279	14755	598																	
179		OBS	T0306	0495	34806	2755			14756	598																	
		STD	0400	0495	3487	2760	0005462	0336	14772	600																	
179		OBS	0408	0495	34873	2760			14774	600																	
		STD	0500	0415	3480	2763	0005167	0389	14755	582																	
		STD	0600	0303	3470	2766	0004801	0439	14723	562																	
179		OBS	T0610	0290	34688	2767			14718	560																	
179		OBS	T0680	0193	34602	2768			14687	477																	

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDIC	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CITY CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT
31	549	EV	65100N	057420W		222	57	08	05	202	1965	LCE	9489	0680	06	15	5	2		X6	5	8	0081
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mb)	DRY BULB	WET BULB											
								15	518		956	072	072	6	11								
MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DTN M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{at}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{at}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{at}^{-1}$	SIO ₄ -Si $\mu\text{g} \cdot \text{at}^{-1}$	pH	S C						
202		STD	0000	0405	3168	2517	0028078	0000	14626	730													
		OBS	0000	0405	31679	2517			14626	730													
		STD	0010	0304	3258	2598	0020398	0024	14597	757													
202		STD	0020	0193	3317	2653	0015084	0042	14558	783													
		OBS	0021	0181	33210	2658			14553	786													
		STD	0030	0040	3328	2672	0013314	0056	14492	754													
202		OBS	0042	-0089	33352	2684			14436	724													
		STD	0050	-0124	3338	2687	0011873	0081	14421	715													
202		OBS	0063	-0154	33426	2692			14410	709													
		STD	0075	-0147	3347	2695	0011101	0110	14416	718													
202		OBS	0084	-0133	33513	2698			14424	719													
		STD	0100	-0091	3353	2698	0010807	0137	14447	697													
		STD	0125	0016	3371	2708	0009939	0163	14503	666													
202		OBS	0125	0016	33705	2708			14503	666													
		STD	0150	0215	3417	2732	0007726	0185	14603	636													
		OBS	T0168	0316	34418	2743			14653	618													
202		STD	0200	0311	3443	2744	0006619	0221	14656	604													
		STD	0250	0303	3445	2746	0006438	0254	14661	582													
		OBS	0257	0302	34452	2747			14662	579													
202		STD	0300	0392	3463	2752	0005998	0285	14710	603													
		OBS	T0348	0456	34764	2756			14746	618													
		STD	0400	0418	3474	2759	0005518	0343	14739	615													
202		STD	0500	0344	3471	2763	0005105	0396	14724	582													
		OBS	T0544	0312	34689	2765			14717	557													
		STD	0600	0137	3452	2766	0004609	0444	14648	515													
202		OBS	T0600	0137	34522	2766			14648	515													

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRAFT INCHES	MARS DEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER			
CTRY CODE	ID. NO.					10'	1"	MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	DIR	NGT		PER	SEA		TYPE	AMT	
31	549	EV	65250N	057390W		222	57	08	05	222	1965	LCE	9490	0622	06	15	7	3		X6	5	8		0082
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB													
								16 <td>517</td> <td>953</td> <td>078</td> <td>072</td> <td>6</td> <td>12</td> <th colspan="4"></th>	517	953	078	072	6					12						
MESSNGR TIME HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		$\Sigma \Delta D$ DYN. M. $\times 10^3$		SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S C					
222		STD	0000	0385	3151	2505	0029195		0000		14615	736												
		OBS	0000	0385	31507	2505					14615	736												
		STD	0010	0194	3233	2586	0021463		0025		14545	756												
222		STD	0020	0053	3292	2642	0016127		0044		14492	777												
		OBS	0025	0002	33141	2663					14472	787												
		STD	0030	-0010	3321	2669	0013608		0059		14468	764												
222		OBS	0049	-0066	33412	2688					14449	712												
		STD	0050	-0072	3342	2688	0011780		0084		14446	713												
		OBS	0073	-0157	33480	2696					14411	722												
222		STD	0075	-0156	3349	2697	0010923		0113		14412	722												
		OBS	0097	-0133	33569	2703					14427	720												
		STD	0100	-0126	3358	2703	0010306		0139		14431	714												
222		STD	0125	-0068	3372	2713	0009434		0164		14464	670												
		OBS	0146	-0016	33831	2719					14494	642												
		STD	0150	-0005	3385	2720	0008723		0187		14499	639												
222		OBS	0196	0120	34117	2734					14567	605												
		STD	0200	0135	3414	2735	0007370		0227		14575	603												
		OBS	T0244	0254	34372	2745					14638	581												
222		STD	0250	0257	3438	2745	0006540		0262		14640	577												
		OBS	T0294	0277	34467	2750					14657	560												
		STD	0300	0287	3449	2751	0006015		0293		14663	561												
222		OBS	0348	0360	34646	2757					14704	566												
222		OBS	T0398	0425	34782	2761					14742	597												
222		STD	0400	0422	3478	2761	0005300		0350		14741	596												
		STD	0500	0254	3462	2764	0004866		0400		14684	541												
		OBS	0573	0132	34503	2765					14641	501												

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATOR	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER				
CTRY CODE	ID. NO.					10'	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DR	HGT	PER		SEA	TYPE		AMT			
31	549	EV	65410N	057430W		222	57	08	06	007	1965	LCE	9491	0587	05	14	4	2		X4	7	8	0083			
						WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
						COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB														
									16	518	949	067	061	5	11											
MESSNGR TIME HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	SiO ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S C									
007		STD	0000	0266	3097	2472	0032321	0000	14557	766																
		OBS	0000	0266	30966	2472			14557	766																
		STD	0010	0095	3205	2570	0022984	0028	14497	765																
007		STD	0020	-0031	3285	2641	0016274	0047	14452	763																
		OBS	0027	-0093	33238	2675			14430	762																
		STD	0030	-0100	3327	2677	0012803	0062	14428	753																
007		STD	0050	-0127	3343	2691	0011481	0086	14420	706																
		OBS	0053	-0129	33452	2693			14420	700																
		STD	0075	-0119	3359	2704	0010265	0113	14431	674																
007		OBS	0080	-0114	33625	2706			14434	669																
		STD	0100	-0083	3373	2714	0009308	0138	14453	648																
		OBS	0106	-0068	33768	2716			14462	643																
007		STD	0125	0052	3394	2724	0008348	0160	14523	643																
		STD	0150	0158	3411	2731	0007749	0180	14577	634																
		OBS	0160	0184	34163	2734			14591	627																
007		STD	0200	0170	3426	2742	0006721	0216	14592	574																
		OBS	0213	0166	34302	2746			14593	565																
		OBS	0245	0219	34410	2751			14623	562																
007		STD	0250	0230	3443	2751	0005934	0248	14629	563																
		STD	0300	0306	3457	2756	0005591	0277	14672	568																
		OBS	T0319	0319	34606	2757			14682	570																
007		STD	0400	0248	3457	2761	0005119	0330	14664	548																
		OBS	T0425	0227	34560	2762			14659	535																
		STD	0500	0167	3452	2763	0004839	0380	14644	477																
007		OBS	T0526	0147	34504	2764			14640	451																

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10°	1°	MO	DAY		HR. 1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT		PER	SEA		TYPE
31	549	EV	66110N	057490W	222	67	08	06	042	1965	LCE	9492	0554	05	14	4	0		X2	7 8	0084	
						WATER		WIND		BARO- METER (mba)		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS. M	DIR.	SPEED OR FORCE	DRY BULB	WET BULB											
									21	S18	942	050	044	7	13							
MESSAGE TIME OF HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	SALINITY DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{dl}^{-1}$	SIO ₄ -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	CO ₂					
		STD	0000	0261	3086	2464	0033074	0000	14553	757												
042		OBS	0000	0261	30862	2464			14553	757												
042		OBS	0007	0258	30858	2464			14553	757												
		STD	0010	0169	3125	2502	0029507	0031	14519	758												
		STD	0020	-0063	3231	2599	0020288	0056	14430	760												
042		OBS	0026	-0155	32754	2637			14394	762												
		STD	0030	-0156	3280	2641	0016254	0074	14395	750												
		STD	0050	-0160	3301	2658	0014616	0105	14399	708												
042		OBS	0051	-0160	33018	2659			14399	706												
		STD	0075	-0163	3328	2680	0012517	0139	14406	689												
042		OBS	0076	-0163	33291	2681			14406	688												
		STD	0100	-0162	3338	2688	0011734	0170	14411	684												
042		OBS	0102	-0162	33392	2689			14412	683												
		STD	0125	-0154	3353	2700	0010589	0197	14422	656												
		STD	0150	-0122	3366	2710	0009679	0223	14443	634												
042		OBS	0152	-0118	33675	2711			14445	633												
		STD	0200	0025	3392	2724	0008343	0268	14522	614												
042		OBS	0202	0028	33929	2725			14524	613												
		STD	0250	0020	3417	2745	0006411	0305	14532	556												
042		OBS	0254	0019	34178	2745			14532													
		STD	0300	0057	3422	2747	0006256	0336	14558	531												
042		OBS	T0305	0066	34236	2747			14563	530												
042		OBS	0364	0258	34539	2758			14662	549												
		STD	0400	0202	3451	2760	0005205	0394	14643	535												
042		OBS	0405	0197	34500	2760			14641	533												
042		OBS	T0455	0175	34496	2761			14640	522												

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CITY CODE	ID. NO.					10°	1°	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT		PER	SEA		TYPE
31	549	EV	66410N	057560W	222	67	08	06	077	1965	LCE	9493	0640	06	16	3	2		X2	4	8	0085
						WATER		WIND		BARO- METER (mba)		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB											
								23	S13	956	028	025	8	11								
MESSAGE TIME OF HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	SALINITY DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{dl}^{-1}$	SIO ₄ -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	S C C					
077		STD	0000	0275	3108	2480	0031561	0000	14562	752												
		OBS	0000	0275	31075	2480			14562	752												
		STD	0010	0274	3105	2478	0031737	0032	14563	757												
077		OBS	0010	0274	31051	2478			14563	757												
		STD	0020	-0021	3214	2583	0021745	0058	14447	795												
077		OBS	0026	-0141	32599	2624			14398	805	089	106	010	026	008							
		STD	0030	-0144	3265	2628	0017434	0078	14398	793												
		STD	0050	-0158	3286	2646	0015772	0111	14398	747												
077		OBS	0052	-0159	32873	2647			14398	744				017	059	011						
		STD	0075	-0166	3299	2657	0014735	0149	14400	720												
077		OBS	0078	-0167	33006	2658			14400	717	056	123	001	068	012							
		STD	0100	-0159	3316	2670	0013429	0185	14410	694												
077		OBS	0104	-0158	33192	2673			14411	691	113	127	001	085	014							
		STD	0125	-0159	3332	2683	0012184	0217	14416	693												
		STD	0150	-0161	3347	2695	0011013	0246	14422	696												
077		OBS	0155	-0161	33503	2698			14423	696	097	107	004	089	011							
		STD	0200	-0114	3378	2719	0008764	0295	14456	627												
077		OBS	0207	-0105	33814	2721			14462	618	116	126	001	119	016							
		STD	0250	-0006	3402	2734	0007408	0335	14518	581												
		STD	0300	0074	3421	2745	0006441	0370	14565	548												
077		OBS	T0316	0092	34257	2748			14577	540	120	122	000	153	019							
		STD	0400	0116	3439	2757	0005389	0429	14603	518												
077		OBS	T0407	0117	34397	2757			14605	517	119	127	000	154	022							
		STD	0500	0118	3447	2763	0004821	0480	14622	512												
077		OBS	T0575	0118	34487	2764			14635	508	129	148	001	162	026							

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARSSEN SQUARE	STATION TIME (GMT)	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
							CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		TYPE	AMT	

31	549	EV	66410N	058210W	222 68 08 06	092	1965	LCE	9494	0713	06	16	2	2		X4	7 8	0086
				WATER		WIND	AIR TEMP. °C		BARO- METER (mb)		DRY BULB		WET BULB	VIS CODE	NO. OBS. DEPTHS		SPECIAL OBSERVATIONS	
				COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE											
						18	512	966	022	022	3	11						

MESSAGE TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	S CC
		STD	0000	0084	2993	2401	0039112	0000	14461	800							
092		OBS	0000	0084	29930	2401			14461	800	060	080	002	000	006		
		STD	0010	-0005	3177	2553	0024623	0032	14447	840							
092		OBS	0010	-0005	31773	2553			14447	840	070	095	004	001	007		
		STD	0020	-0066	3252	2616	0018669	0054	14431	778							
092		OBS	0023	-0082	32682	2629			14427	764	077	091	008	018	007		
		STD	0030	-0115	3278	2638	0016514	0071	14414	753							
092		OBS	0047	-0164	32966	2655			14396	727	100	115	005	061	010		
		STD	0050	-0164	3299	2656	0014761	0102	14397	722							
092		OBS	0070	-0161	33127	2667			14403	697	112	125	004	078	013		
		STD	0075	-0160	3316	2670	0013445	0138	14405	695							
092		OBS	0094	-0156	33273	2679			14412	687	115	132	003	086	014		
		STD	0100	-0155	3330	2681	0012366	0170	14414	687							
		STD	0125	-0151	3343	2692	0011363	0200	14421	683							
092		OBS	0139	-0149	33499	2697			14426	677	112	125	002	096	014		
		STD	0150	-0140	3356	2702	0010385	0227	14433	667							
092		OBS	0186	-0103	33750	2716			14459	635	111	120	005	115	015		
		STD	0200	-0070	3383	2721	0008558	0274	14477	622							
		STD	0250	0022	3405	2735	0007335	0314	14531	581							
092		OBS	0281	0059	34153	2741			14555	561	146	127	002	136	017		
		STD	0300	0063	3418	2743	0006597	0349	14560	552							
092		OBS	T0379	0075	34270	2750			14580	522	125	136	002	158	021		
		STD	0400	0075	3429	2751	0005855	0411	14584	520							
		STD	0500	0077	3438	2758	0005199	0466	14602	509							
		STD	0600	0079	3444	2763	0004742	0516	14621	499							
092		OBS	T0600	0079	34444	2763			14621	499	119	129	002	132	024		

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARSSEN SQUARE	STATION TIME (GMT)	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
							CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		TYPE	AMT	

31	549	EV	66410N	058460W	222 68 08 06	116	1965	LCE	9495	0820	07	14	3	2		X4	7 8	0087
				WATER		WIND	AIR TEMP. °C		BARO- METER (mb)		DRY BULB		WET BULB	VIS CODE	NO. OBS. DEPTHS		SPECIAL OBSERVATIONS	
				COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE											
						18	512	966	039	039	3	12						

MESSAGE TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO ₂ -N $\mu\text{g} - \text{at/l}$	NO ₃ -N $\mu\text{g} - \text{at/l}$	SiO ₄ -Si $\mu\text{g} - \text{at/l}$	pH	S CC
		STD	0000	-0063	2998	2410	0038215	0000	14394	808							
116		OBS	0000	-0063	29976	2410			14394	808	064	084	004	000	002		
		STD	0010	0033	3232	2595	0020624	0029	14472	870							
116		OBS	0010	0033	32318	2595			14472	870	056	079	002	000	006		
		STD	0020	-0077	3267	2628	0017482	0048	14428	847							
116		OBS	0025	-0117	32812	2641			14412	832	072	109	011	015	008		
		STD	0030	-0132	3289	2648	0015622	0065	14407	798							
		STD	0050	-0164	3317	2671	0013377	0094	14399	708							
116		OBS	0051	-0165	33184	2672			14399	706	100	110	007	069	013		
		STD	0075	-0147	3342	2691	0011485	0125	14415	708							
116		OBS	0076	-0146	33427	2691			14416	703	095	114	011	078	011		
		STD	0100	-0123	3362	2706	0010009	0152	14433	652							
116		OBS	0101	-0122	33623	2707			14434	650	111	124	002	111	014		
		STD	0125	-0117	3372	2714	0009250	0176	14442	633							
		STD	0150	-0112	3382	2722	0008506	0198	14449	613							
116		OBS	0150	-0112	33818	2722			14449	613	118	127	003	118	017		
		STD	0200	-0062	3397	2733	0007495	0238	14483	569							
116		OBS	T0200	-0062	33974	2733			14483	569	122	131	002	115	019		
		STD	0250	-0020	3405	2737	0007106	0275	14512	549							
		STD	0300	0009	3412	2741	0006725	0309	14535	535							
116		OBS	0305	0011	34122	2741			14536	534	128	140	002		021		
116		OBS	T0398	0029	34240	2750			14562	522	120	131	002	146	021		
		STD	0400	0030	3424	2750	0005919	0373	14562	522							
		STD	0500	0065	3433	2755	0005504	0430	14596	519							
116		OBS	T0599	0078	34413	2761			14620	511	126	133	000	163	025		
		STD	0600	0078	3441	2761	0004967	0482	14620	511							
		STD	0700	0069	3445	2764	0004655	0530	14633	498							
116		OBS	T0708	0067	34450	2765			14633	497	130	139	002	166	029		

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH FOOT	MARS SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYN	
31	549	EV	66410N	059100W	222	69	08	06	137	1965	LCE	9496	0928	09	18	0	2		X4	X	9	0088
						WATER		WIND		BARO- METER		AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mb)	DRY BULB	WET BULB										
								19		S20	956	022	022	3	12							
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t		S Δ D DYN. M. X 10 ³	SOUND VELOCITY	D ₂ ml/l	PO ₄ -P μg · dl ⁻¹	TOTAL-P μg · dl ⁻¹	NO ₂ -N μg · dl ⁻¹	NO ₃ -N μg · dl ⁻¹	SiO ₄ -Si μg · dl ⁻¹	pH					
137	STD		0000	-0002	3003	2413	0037968		0000	14423	799											
	OBS		0000	-0002	30033	2413				14423	799											
	STD		0010	0042	3088	2479	0031653		0035	14457	814	063	085	002	000	007						
	STD		0020	0087	3162	2536	0026214		0064	14489	830											
137	OBS		0026	0113	32019	2567				14507	839	032	058	011	000	003						
	STD		0030	0079	3229	2590	0021065		0087	14496	819											
	STD		0050	-0057	3325	2674	0013099		0122	14451	745											
137	OBS		0052	-0068	33310	2679				14447	740	078	107	011	050	007						
	STD		0075	-0150	3342	2691	0011476		0152	14414	712											
	OBS		0077	-0152	33436	2692				14413	710	082	098	016	083	009						
137	STD		0100	-0111	3358	2703	0010355		0180	14438	692											
	OBS		0102	-0107	33592	2704				14441	691	094	101	009	098	009						
	STD		0125	-0040	3373	2712	0009477		0204	14478	679											
137	STD		0150	0013	3386	2720	0008740		0227	14508	660											
	OBS		0152	0016	33865	2720				14510	658	101	110	005	115	011						
	STD		0200	0054	3405	2733	0007524		0268	14537	601											
137	OBS		T0203	0056	34058	2734				14539	598	112	121	004	131	014						
	STD		0250	0062	3417	2742	0006664		0303	14551	563											
	STD		0300	0069	3425	2748	0006103		0335	14563	536											
137	OBS		0304	0069	34260	2749				14564	534	124	131	003	155	021						
	STD		0400	0058	3434	2756	0005362		0392	14577	513											
	OBS		T0404	0058	34346	2757				14577	512	123	137	001	156	024						
137	STD		0500	0064	3440	2761	0004952		0444	14596	512											
	STD		0600	0070	3446	2765	0004574		0492	14617	512											
	OBS		T0606	0070	34460	2765				14618	512	125	140	001	151	027						
137	STD		0700	0059	3447	2767	0004410		0537	14629	500											
	STD		0800	0048	3447	2767	0004330		0580	14640	488											
	OBS		T0809	0047	34473	2768				14642	487	127	135	001	158	034						
137	STD		0900	0047	3447	2767	0004327		0624	14657	489											
	OBS		T0910	0047	34469	2767				14658	490	128	139	000	160	035						

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS SQUARE	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYN
31	549	EV	66410N	059340W	222	69	08 06 154	1965	LCE	9497	0836	08	17	1 2	X1	4 4		0089		
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS				
						COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	(mb)	DRY BULB	WET BULB								
								17	S12	976	022	017	7	13						
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY-σ _t		S Δ D DYN. M. X 10 ³	SOUND VELOCITY	D ₂ ml/l	PO ₄ -P μg · dl ⁻¹	TOTAL-P μg · dl ⁻¹	NO ₂ -N μg · dl ⁻¹	NO ₃ -N μg · dl ⁻¹	SiO ₄ -Si μg · dl ⁻¹	pH	SAT	
154	STD		0000	-0009	3039	2442		0035229		0000	14425	812								
	OBS		0000	-0009	30387	2442					14425	812	066	089	002	000	006			
	STD		0010	-0073	3160	2542		0025706		0030	14413	820								
154	STD		0020	-0120	3247	2613		0018886		0053	14405	827								
	OBS		0025	-0138	32782	2639					14402	831	088	110	013	029	009			
	STD		0030	-0146	3285	2645		0015893		0070	14400	805								
154	STD		0050	-0164	3308	2664		0014091		0100	14398	729								
	OBS		0050	-0164	33077	2664					14398	729	099	115	001	063	011			
	OBS		0074	-0161	33256	2678					14406	698	112	121	001	084	015			
154	STD		0075	-0161	3326	2678		0012675		0134	14406	699								
	OBS		0099	-0165	33430	2692					14411	713	095	109	013	087	013			
	STD		0100	-0164	3344	2693		0011268		0164	14411	712								
154	STD		0125	-0146	3357	2703		0010306		0190	14426	679								
	OBS		0148	-0129	33681	2711					14439	657	115	120	003	092	014			
	STD		0150	-0126	3369	2712		0009436		0215	14441	656								
154	OBS		T0198	-0028	33899	2725					14498	633	110	121	005	121	013			
	STD		0200	-0020	3391	2726		0008181		0259	14502	632								
	STD		0250	0159	3422	2740		0006953		0297	14595	611								
154	OBS		0296	0274	34408	2746					14656	597	105	113	002	133	013			
	STD		0300	0285	3441	2745		0006597		0331	14661	597								
	OBS		T0345	0343							589		109	121	001	146	013			
154	OBS		T0394	0262	34517	2756					14668	566	117	121	002	138	016			
	STD		0400	0254	3451	2756		0005624		0392	14666	564								
	STD		0500	0138	3446	2761		0005055		0445	14631	535								
154	OBS		T0594	0070	34426	2762					14615	516	126	134	000	155	026			
	STD		0600	0069	3443	2763		0004803		0495	14616	516								
	STD		0700	0059	3443	2763		0004707		0542	14628	509								
154	OBS		T0795	0058	34433	2764					14644	503	129	134	001	163	030			
	STD		0800	0058	3444	2764		0004671		0589	14645	504								
	OBS		0814	0059	34441	2764					14647	507	123	134	002	159	031			

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDIC	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER			
CTRY CODE	ID. NO.					10'	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE		AMT		
31	549	EV	6641 N	06000 W		223	60	08	06	175	1965	LCE	9498	0640	06	18	1	2		X1	4	1	0090		
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS									
						COLOR CODE	TRANS. IMI	DIR.	SPEED OR FORCE	METER (mba)	DRY BULB	WET BULB													
								18	510	990	028	022	8	11											
MESSAGE TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T		SPECIFIC VOLUME ANOMALY- σ_t		S Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	Si O ₄ -Si μg - at/l	pH			S C				
		STD	0000	0009	3053	2452	0034200		0000	14435	823														
175		OBS	0000	0009	30530	2452				14435	823	067	086	001	000	006									
		STD	0010	-0075	3182	2559	0024012		0029	14416	791														
		STD	0020	-0133	3268	2631	0017239		0050	14402	766														
175		OBS	0022	-0142	32796	2640				14400	762	097	120	024	045	010									
		STD	0030	-0156	3285	2645	0015869		0066	14395	753														
175		OBS	0044	-0170	32927	2651				14392	739	107	124	005	061	011									
		STD	0050	-0170	3293	2652	0015208		0097	14393	734														
175		OBS	0065	-0169	32991	2657				14397	720	105	121	001	074	012									
		STD	0075	-0167	3309	2665	0013965		0134	14401	709														
175		OBS	0088	-0164	33201	2674				14406	696	107	118	002	079	014									
		STD	0100	-0159	3327	2679	0012587		0167	14412	678														
		STD	0125	-0147	3341	2690	0011528		0197	14423	656														
175		OBS	0130	-0145	33441	2693				14425	654	117	131	003	104	016									
		STD	0150	0019	3354	2694	0011206		0226	14506	663														
175		OBS	T0172	0139	33641	2695				14565	666	107	121	003	097	013									
		STD	0200	0100	3376	2707	0010012		0279	14554	646														
		STD	0250	0031	3398	2729	0007917		0323	14534	618														
175		OBS	T0255	0024	34003	2731				14532	616	113	123	004	127	014									
		STD	0300	0184	3428	2743	0006710		0360	14615	605														
175		OBS	T0336	0259	34425	2748				14656	593	108	110	002	124	013									
		STD	0400	0152	3440	2755	0005588		0422	14619	549														
175		OBS	T0488	0065	34383	2759				14595	514	106	115	001	162	023									
		STD	0500	0065	3439	2760	0005069		0475	14597	514														
		STD	0600	0067	3441	2761	0004897		0525	14615	516														
175		OBS	T0628	0068	34419	2762				14620	517	218	270	026	154	039									

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DATE MO DAY HR.1/10	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.						10'	1"	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE	
31	549	EV	6641 N	06026 W	223 60 08 06 195	1965	LCE	9499			0525	05	18	2	2			X1	3	2	0091
		WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS										
		COLOR CODE	TRANS. IMI	DIR.	SPEED OR FORCE		DRY BULB	WET BULB													
					18	518	973	033	022	8	10										
MESSAGE TIME HR 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t		S Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH			S C	
		STD	0000	-0045	3161	2542	0025719		0000	14425	853										
195		OBS	0000	-0045	31611	2542				14425	853	056	095	001	000	004					
		STD	0010	-0081	3201	2575	0022536		0024	14415	845										
		STD	0020	-0111	3235	2603	0019832		0045	14408	830										
195		OBS	0026	-0126	32525	2618				14404	818	094	111	013	026	009					
		STD	0030	-0134	3263	2627	0017613		0064	14403	800										
		STD	0050	-0162	3300	2657	0014687		0096	14398	739										
195		OBS	0052	-0163	33022	2659				14398	735	106	131	011	066	013					
		STD	0075	-0160	3306	2662	0014212		0132	14404	728										
195		OBS	0078	-0160	33073	2663				14404	726	108	118	009	079	012					
		STD	0100	-0159	3320	2673	0013122		0167	14410	695										
195		OBS	0104	-0159	33222	2675				14411	690	113	126	002	089	014					
		STD	0125	0025	3338	2681	0012459		0199	14503	668										
		STD	0150	0128	3354	2688	0011857		0229	14555	645										
195		OBS	T0155	0133	33567	2689				14559	641	131	144	004	108	017					
		STD	0200	-0083	3380	2720	0008732		0280	14471	611										
195		OBS	T0206	-0101	33821	2722				14464	607	125	127	002	130	018					
		STD	0250	-0061	3395	2731	0007667		0321	14492	576										
		STD	0300	-0023	3407	2739	0006929		0358	14519	550										
195		OBS	T0309	-0017	34084	2740				14524	546	149	176	004	146	022					
		STD	0400	0030	3423	2749	0006010		0423	14562	525										
195		OBS	T0407	0032	34241	2750				14564	524	139	152	004	154	023					
		STD	0500	0037	3434	2758	0005219		0479	14583	514										
195		OBS	0511	0037	34353	2759				14586	513	147	172	005	157	026					

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS INDEX	MARS SQUARE	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER					
CTRY CODE	ID. NO.						MO	DAY		HR.1/10	CRUISE NO.			STATION NUMBER	WAVE OBSERVATIONS			TYPE	AMT						
															DIR	HGT					PER				
31	549	EV	6641 N	06052 W	223	60	08	06	216	1965	LCE	9500	0421	04	18	2	2	X1	3	3	0092				
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS											
		COLOR CODE		TRANS. (m)		DIR.		SPEED OR FORCE		DRY BULB		WET BULB		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
				20		S24		983		022		017		8		08									
MESSAGE TIME HR 1/10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t		Σ Δ DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SiO ₄ -Si μg - at/l	pH	S	C						
216		STD	0000	-0053	3143	2527	0027073		0000	14419	835	064	096	003	005	004									
		OBS	0000	-0053	31431	2527				14419	835														
		STD	0010	-0094	3186	2563	0023648		0025	14407	820														
216		STD	0020	-0126	3222	2593	0020790		0048	14399	803	106	154	013	033	011									
		OBS	0025	-0138	32374	2606				14396	794														
		STD	0030	-0144	3250	2616	0018587		0067	14396	779														
216		STD	0050	-0163	3285	2645	0015837		0102	14395	738	107	118	010	060	010									
		OBS	0051	-0164	32858	2646				14395	737														
		STD	0075	-0172	3296	2654	0014953		0140	14397	727														
216		OBS	0076	-0172	32966	2655				14397	726	120	145	005	067	013									
		STD	0100	-0161	3312	2667	0013731		0176	14408	700														
		STD	0125	-0147	3328	2680	0012524		0209	14421	674														
216		OBS	T0129	-0144	33301	2681				14424	670	117	131	002	097	016									
		STD	0150	-0125	3344	2692	0011351		0239	14438	648														
		OBS	0180	-0101	33622	2706				14457	621														
216		STD	0200	-0088	3372	2713	0009322		0290	14468	606	135	196	005	118	021									
		STD	0250	-0058	3394	2730	0007757		0333	14493	573														
		OBS	T0284	-0039	34044	2737				14509	555														
216		STD	0300	-0030	3408	2740	0006816		0370	14516	548	153	166	005	147	022									
		OBS	T0388	0015	34192	2747				14553	522														

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS INDEX	MARS SQUARE	STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.						MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE
31	549	EV	6256 N	05711 W	222	27	08	08	185	1965	LCE	9501	2261	22	35	2	2	X8	5	8	0093
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS.		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
		COLOR CODE		TRANS. (m)		DIR.		SPEED OR FORCE		DRY BULB		WET BULB		VIS. CODE							
				31		S10		054		128		111		8							
MESSNGR TIME HR 1/10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t		Σ Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg · at/l	TOTAL-P μg · at/l	NO ₂ -N μg · at/l	NO ₃ -N μg · at/l	SiO ₄ -Si μg · at/l	pH	S	C		
185		STD	0000	0782	3398	2652	0015229		0000	14809	672										
		OBS	0000	0782	33978	2652				14809	672										
		STD	0010	0734	3403	2663	0014202		0015	14793	680										
185		STD	0020	0685	3410	2675	0013050		0028	14776	688										
		OBS	0026	0654	34166	2685				14766	693										
		STD	0030	0623	3424	2694	0011236		0040	14755	686										
185		STD	0050	0519	3453	2730	0007864		0060	14720	664										
		OBS	0052	0514	34554	2733				14719	663										
		STD	0075	0523	3472	2745	0006515		0078	14728	663										
185		OBS	0078	0524	34740	2746				14729	663										
		STD	0100	0515	3479	2751	0005933		0093	14730	651										
		OBS	0103	0514	34802	2752				14730	650										
185		STD	0125	0520	3486	2756	0005498		0107	14737	653										
		STD	0150	0525	3490	2759	0005288		0121	14744	657										
		OBS	0156	0526	34911	2760				14745	658										
185		STD	0200	0531	3494	2761	0005123		0147	14755	632										
		OBS	T0209	0532	34948	2762				14757	629										
		STD	0250	0521	3495	2763	0005030		0172	14759	634										
185		STD	0300	0508	3494	2764	0004968		0197	14762	640										
		OBS	0313	0505	34940	2764				14763	641										
		STD	0400	0483	3493	2766	0004873		0247	14768	630										
185		OBS	T0419	0478	34925	2766				14769	628										
		STD	0500	0461	3492	2768	0004772		0295	14776	627										
		STD	0600	0441	3492	2770	0004659		0342	14784	626										
185		OBS	0631	0435	34921	2771				14786	625										
		STD	0700	0422	3492	2772	0004545		0388	14793	623										
		STD	0800	0405	3492	2774	0004442		0433	14802	620										
185		OBS	0851	0397	34921	2775				14807	619										
		STD	0900	0392	3492	2775	0004399		0477	14813	620										
		STD	1000	0383	3492	2776	0004396		0521	14826	623										
185		OBS	1071		34913						625										
		STD	1100	0373	3491	2777	0004389		0565	14839	628										
		STD	1200	0363	3491	2778	0004356		0609	14851	640										
199		OBS	T1252	0358	34913	2778				14858	646										
		185	OBS	1277	0360	34914	2778				14863	629									
		STD	1300	0360	3492	2779	0004349		0652	14867	628										
199		STD	1400	0356	3492	2779	0004381		0696	14882	623										
		STD	1500	0352	3493	2780	0004337		0739	14897	619										
		OBS	1559	0348	34931	2781				14906	616										
199		STD	1750	0332	3493	2782	0004250		0847	14931	630										
		OBS	T1843	0322	34934	2783				14943	636										
		STD	2000	0303	3493	2785	0004044		0950	14961	615										
199		OBS	T2031	0296	34933	2786				14964	614										
199		OBS	2219	0237	34926	2790				14970	637										

REFERENCE	SHIP		LATITUDE	LONGITUDE	MARS DEN	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
	TYPE CODE	ID. NO.				10"	1"	MO	DAY	HR. 1-10	CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA	TYPE	AMT	

31	549	EV	6200 N	05610 W	222	26	08	09	023	1965	LCE	9502	2651	26	29	1	2		X1	4	7	0094
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WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS IMI	DIR.	SPEED (KTS)		DRY BULB	WET BULB			

		34	512	075	094	078	8	18	
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MESSNGR TIME OF HR. 1-10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	Σ Δ D DWN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - at/l	TOTAL-P μg - at/l	NO ₂ -N μg - at/l	NO ₃ -N μg - at/l	SIO ₄ -Si μg - at/l	pH	σ _t °C
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039		STD	0000	0779	3377	2636	0016758	0000	14805	632							
		OBS	0000	0779	33767	2636			14805	632							
		STD	0010	0606	3388	2668	0013693	0015	14740	682							
		STD	0020	0476	3401	2694	0011258	0028	14690	711							
039		OBS	0028	0403	34117	2710			14663	720							
		STD	0030	0398	3416	2714	0009344	0038	14661	712							
		STD	0050	0368	3449	2744	0006588	0054	14656	654							
039		OBS	0057	0366	34566	2750			14658	641							
		STD	0075	0395	3465	2753	0005671	0069	14674	635							
039		OBS	0085	0407	34690	2755			14681	631							
		STD	0100	0417	3472	2757	0005393	0083	14688	624							
039		OBS	0112	0424	34747	2758			14694	621							
		STD	0125	0432	3477	2759	0005199	0096	14700	626							
		STD	0150	0444	3480	2760	0005129	0109	14709	633							
039		OBS	0168	0452	34826	2761			14716	636							
		STD	0200	0462	3485	2762	0005005	0135	14725	632							
039		OBS	T0222	0466	34867	2763			14731	631							
		STD	0250	0463	3487	2764	0004922	0159	14734	634							
		STD	0300	0458	3487	2764	0004921	0184	14741	641							
039		OBS	0337	0454	34876	2765			14745	645							
		STD	0400	0445	3488	2766	0004807	0233	14752	605							
039		OBS	0450		34889				584								
		STD	0500	0432	3489	2769	0004689	0280	14763	587							
		STD	0600	0419	3489	2770	0004641	0327	14774	599							
039		OBS	0675	0411	34891	2771			14783	612							
		STD	0700	0409	3489	2771	0004601	0373	14787	623							
		STD	0800	0399	3490	2773	0004505	0419	14799	656							
039		OBS	0899		34912				673								
		STD	0900	0390	3491	2775	0004440	0463	14812	673							
		STD	1000	0382	3491	2775	0004435	0508	14826	662							
		STD	1100	0374	3491	2776	0004426	0552	14839	654							
039		OBS	T1150	0371	34907	2776			14846	650							
		STD	1200	0367	3491	2777	0004448	0596	14853	649							
		STD	1300	0361	3491	2777	0004450	0641	14867	644							
039		OBS	T1347	0359	34908	2778			14874	641							
		STD	1400	0358	3491	2778	0004479	0685	14883	633							
		STD	1500	0356	3492	2779	0004461	0730	14899	623							
023		OBS	T1531	0355	34924	2779			14904	622							
		STD	1750	0346	3493	2781	0004455	0842	14937	639							
023		OBS	1789	0343	34932	2781			14942	642							
023		OBS	T1967	0325	34935	2783			14965	632							
		STD	2000	0322	3494	2783	0004283	0951	14969	627							
023		OBS	2218	0294	34936	2786			14995	611							
		STD	2500	0246	3493	2790	0003593	1148	15023	630							
023		OBS	T2566	0233	34925	2791			15028	641							

REFERENCE		SHIP CODE	LATITUDE 1° 10'	LONGITUDE 1° 10'	MARS SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NO. STATION NUMBER	
CTRY CODE	ID. NO.					10'	1"	MO	DAY		HR. 10'	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE
31	549	EV	6104 N	05534 W	222	15	08	09	115	1965	LCE	9503	2987	28	35	1	X		X2	4	8	0095
						WATER		WIND		BARO- METER		AIR TEMP °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE			DRY BULB	WET BULB									
									35	512	095	097	086	8	19							

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	D_2 m/s	$PO_2=P$ $\mu g \cdot ml^{-1}$	TOTAL-P $\mu g \cdot ml^{-1}$	$NO_2=N$ $\mu g \cdot ml^{-1}$	$NO_3=N$ $\mu g \cdot ml^{-1}$	$SiO_2=S$ $\mu g \cdot ml^{-1}$	pH	3
		STD	0000	0804	3408	2657	0014756	0000	14819	660							
	128	OBS	0000	0804	34083	2657			14819	660							
		STD	0010	0803	3412	2660	0014498	0015	14821	660							
		STD	0020	0802	3415	2663	0014245	0029	14822	660							
	128	OBS	0026	0801	34173	2664			14823	660							
		STD	0030	0724	3428	2684	0012238	0042	14795	658							
		STD	0050	0471	3468	2748	0006210	0061	14702	647							
	128	OBS	0052	0458	34706	2751			14697	646							
		STD	0075	0484	3483	2758	0005256	0075	14714	637							
	128	OBS	0077	0485	34832	2758			14714	636							
		STD	0100	0487	3485	2759	0005166	0088	14719	638							
	128	OBS	0102	0487	34856	2760			14720	638							
		STD	0125	0493	3488	2761	0005039	0101	14726	638							
		STD	0150	0499	3489	2761	0005066	0113	14733	637							
	139	OBS	0153	0500	34895	2761			14734	637							
		STD	0200	0483	3489	2763	0004941	0138	14735	636							
	139	OBS	0204	0482	34885	2763			14735	636							
		STD	0250	0474	3488	2763	0004971	0163	14739	634							
		STD	0300	0462	3488	2765	0004891	0188	14742	632							
	128	OBS	T0305	0461	34876	2764			14743	632							
		STD	0400	0430	3487	2768	0004683	0236	14745	633							
	139	OBS	0405	0429	34874	2768			14746	633							
		STD	0500	0407	3487	2770	0004571	0282	14752	634							
		STD	0600	0391	3486	2771	0004540	0328	14762	635							
	139	OBS	T0605	0390	34861	2771			14763	635							
		STD	0700	0385	3488	2773	0004423	0372	14776	633							
		STD	0800	0379	3489	2774	0004370	0416	14791	631							
	139	OBS	0810	0378	34894	2775			14792	631							
		STD	0900	0370	3489	2775	0004331	0460	14804	633							
		STD	1000	0364	3489	2776	0004354	0503	14818	635							
	139	OBS	T1037	0362	34892	2776			14823	636							
		STD	1100	0362	3490	2776	0004392	0547	14834	634							
		STD	1200	0361	3490	2777	0004419	0591	14850	631							
	139	OBS	T1241	0360	34903	2777			14857	630							
		STD	1300	0358	3491	2778	0004398	0635	14866	628							
	115	OBS	1366	0357	34924	2779			14877	626							
		STD	1400	0357	3493	2780	0004320	0679	14882	623							
		STD	1500	0356	3493	2780	0004388	0722	14899	617							
	115	OBS	1560	0354	34935	2780			14908	615							
		STD	1750	0344	3494	2781	0004385	0832	14936	618							
	115	OBS	1851	0336	34936	2782			14950	619							
		STD	2000	0322	3494	2783	0004283	0940	14969	615							
	115	OBS	T2047	0317	34934	2784			14975	614							
		STD	2500	0276	3493	2787	0004010	1148	15035	619							
	115	OBS	2545	0269	34925	2787			15040	621							
	115	OBS	T2844	0204	34908	2792			15064	636							

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MAPS SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT PER	SEA		TYPE	AMT	

31	549	EV	6008 N	05443 W	222	04	08	09	207	1965	LCE	9504	3194	32	28	3	2		X1	8	6	0096
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WATER		WIND		AIR TEMP. °C		NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. mm	DIR.	SPEED OR FORCE	BARO- METER (mbars)	WET BULB	VIS CODE	

		28	S07	119	100	083	8	18	
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MESSNGR HR 1/10	CAST TIME OF NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	Δ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₂ -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO ₃ -N $\mu\text{g} \cdot \text{dl}^{-1}$	SiO ₄ -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	S C
		STD	0000	0888	3424	2656	0014823	0000	14853	666							
218		OBS	0000	0888	34239	2656			14853	666							
		STD	0010	0829	3432	2672	0013370	0014	14833	666							
		STD	0020	0763	3440	2688	0011859	0027	14810	666							
218		OBS	0027	0711	34461	2700			14792	666							
		STD	0030	0675	3449	2707	0010027	0038	14779	664							
		STD	0050	0501	3467	2743	0006614	0054	14714	650							
218		OBS	0053	0485	34687	2747			14709	649							
		STD	0075	0454	3479	2758	0005230	0069	14701	642							
218		OBS	0080	0450	34805	2760			14700	641							
		STD	0100	0452	3482	2761	0005005	0082	14704	639							
218		OBS	0106	0452	34660	27480				638							
		STD	0125	0444	3483	2763	0004877	0094	14705	639							
		STD	0150	0435	3484	2764	0004733	0106	14706	640							
218		OBS	0160	0432	34846	2765			14706	641							
		STD	0200	0422	3485	2767	0004571	0130	14709	640							
218		OBS	0213	0418	34855	2767			14709	640							
		STD	0250	0404	3484	2768	0004506	0152	14709	645							
		STD	0300	0391	3483	2768	0004492	0175	14712	652							
218		OBS	T0315	0388	34826	2768			14713	654							
		STD	0400	0383	3485	2771	0004350	0219	14725	643							
218		OBS	0426	0382	34856	2771			14729	641							
		STD	0500	0384	3486	2771	0004379	0263	14743	640							
		STD	0600	0387	3487	2772	0004428	0307	14761	639							
218		OBS	T0635	0388	34875	2772			14767	639							
		STD	0700	0378	3488	2773	0004381	0351	14773	639							
		STD	0800	0366	3488	2774	0004325	0394	14785	638							
218		OBS	0847	0362	34876	2775			14791	638							
		STD	0900	0361	3488	2775	0004323	0437	14800	646							
		STD	1000	0358	3488	2776	0004372	0481	14815	654							
218		OBS	T1081	0356	34886	2776			14828	655							
		STD	1100	0355	3489	2776	0004375	0525	14831	653							
		STD	1200	0353	3489	2776	0004440	0569	14847	643							
218		OBS	T1273	0352	34884	2776			14858	637							
		STD	1300	0352	3488	2776	0004520	0614	14863	636							
		STD	1400	0354	3488	2776	0004624	0659	14880	631							
		STD	1500	0355	3488	2776	0004721	0706	14898	627							
207		OBS	1564	0356	34882	2776			14909	625							
		STD	1750	0350	3490	2778	0004727	0824	14938	620							
		STD	2000	0337	3493	2781	0004559	0940	14976	613							
207		OBS	T2050	0333	34930	2782			14982	612							
		STD	2500	0289	3494	2787	0004136	1157	15041	628							
207		OBS	T2531	0285	34939	2787			15045	629							
		STD	3000	0216	3491	2791	0003556	1350	15096	637							
207		OBS	3008	0214	34908	2791			15096	637							
207		OBS	3151	0177	34907	2794			15105	640							

REFERENCE		SHIP CODE	LATITUDE ° 1:10	LONGITUDE ° 1:10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS				WEA- THIR CODE	CLOUD CODES	NODC STATION NUMBER																																													
CITY CODE	ID. NO.					10"	1"	MD DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA																																																
31	549	EV	5916 N	05355 W	186	93	08	10 050	1965	LCE	9505	3191	28	20	1	2		X1	4 4		0097																																												
<table><tr><td colspan="2">WATER</td><td colspan="2">WIND</td><td colspan="2">AIR TEMP °C</td><td rowspan="2">BARO- METER (mb)</td><td colspan="2">DRY BULB</td><td colspan="2">WET BULB</td><td rowspan="2">VIS. CODE</td><td rowspan="2">NO. OBS. DEPTHS</td><td colspan="2" rowspan="2">SPECIAL OBSERVATIONS</td></tr><tr><td>COLOR CODE</td><td>TRANS. (m)</td><td>DIR.</td><td>SPEED OR FORCE</td><td colspan="3"></td><td colspan="2"></td><td colspan="6"></td></tr><tr><td></td><td></td><td></td><td></td><td>19</td><td>S10</td><td>112</td><td>100</td><td>086</td><td>8</td><td>18</td><td></td><td></td><td></td><td></td></tr></table>																					WATER		WIND		AIR TEMP °C		BARO- METER (mb)	DRY BULB		WET BULB		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE																19	S10	112	100	086	8	18				
WATER		WIND		AIR TEMP °C		BARO- METER (mb)	DRY BULB		WET BULB		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS																																																				
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE																																																														
				19	S10	112	100	086	8	18																																																							

MESSNGR TIME HR. 1/10	CASST ND.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ _t	S Δ D DYN. M x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg · dl ⁻¹	TOTAL-P μg · dl ⁻¹	NO ₂ -N μg · dl ⁻¹	NO ₃ -N μg · dl ⁻¹	SiO ₄ -S μg · dl ⁻¹	pH
064		STD	0000	0891	3448	2675	0013066	0000	14857	653						
		OBS	0000	0891	34482	2675			14857	653						
		STD	0010	0836	3452	2686	0011986	0013	14838	634						
		STD	0020	0767	3457	2701	0010650	0024	14814	625						
064		OBS	0025	0727	34696	2708			14800	624						
		STD	0030	0659	3463	2720	0008777	0034	14774	630						
		STD	0050	0473	3475	2753	0005706	0048	14704	654						
064		OBS	0051	0467	34752	2754			14702	655						
		STD	0075	0433	3480	2761	0004937	0061	14692	643						
064		OBS	0076	0432	34803	2762			14692	642						
		STD	0100	0459	3487	2764	0004711	0073	14708	637						
064		OBS	0102	0460	34876	2764			14709	636						
		STD	0125	0437	3486	2766	0004578	0085	14703	638						
		STD	0150	0420	3484	2766	0004559	0096	14700	641						
064		OBS	0152	0419	34841	2766			14699	641						
		STD	0200	0410	3484	2767	0004489	0119	14704	649						
064		OBS	0203	0409	34844	2767			14704	649						
		STD	0250	0398	3485	2769	0004405	0141	14707	645						
		STD	0300	0389	3485	2770	0004343	0163	14711	641						
064		OBS	T0303	0388	34847	2770			14711	641						
		STD	0400	0373	3485	2771	0004267	0206	14721	652						
064		OBS	0404	0372	34847	2771			14721	652						
		STD	0500	0367	3486	2773	0004190	0249	14735	651						
		STD	0600	0361	3486	2774	0004214	0291	14749	650						
064		OBS	0603		34861					650						
		STD	0700	0355	3486	2774	0004229	0333	14764	647						
		STD	0800	0349	3486	2775	0004240	0375	14778	643						
064		OBS	T0804	0349	34862	2775			14778	643						
		STD	0900	0348	3487	2776	0004251	0418	14794	650						
		STD	1000	0347	3487	2776	0004322	0460	14810	657						
064		OBS	1036	0347	34877	2776			14816	660						
		STD	1100	0347	3488	2777	0004324	0504	14827	650						
050		OBS	1124	0347	34882	2777			14831	648						
		STD	1200	0349	3488	2776	0004426	0547	14845	651						
064		OBS	T1208	0349	34877	2776			14846	651						
		STD	1300	0349	3488	2776	0004510	0592	14862	650						
		STD	1400	0350	3488	2776	0004593	0638	14879	648						
		STD	1500	0350	3489	2777	0004601	0684	14896	645						
050		OBS	T1623	0350	34895	2778			14917	641						
		STD	1750	0350	3491	2779	0004654	0799	14938	631						
		STD	2000	0345	3492	2780	0004705	0916	14979	617						
050		OBS	2103	0341	34926	2781			14995	614						
		STD	2500	0311	3493	2784	0004544	1147	15050	616						
050		OBS	2629	0299	34925	2785			15067	619						
050		OBS	T2807	0280	34931	2787			15090	626						

REFERENCE		SHIP CODE	LATITUDE 1°/10	LONGITUDE 1°/10	DEPTH INCHES	MAPS/DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA	TYPE	AMT	

31	549	EV	5829 N	05254 W		186	82	08	10	137	1965	LCE	9506	3346	31	14	5	2		X2	3	18	0098
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WATER		WIND		BARO- METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		14	522	061	111	089	8	18	

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\times 10^3$	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO ₂ -N $\mu\text{g} \cdot \text{at/l}$	NO ₃ -N $\mu\text{g} \cdot \text{at/l}$	Si O ₄ -Si $\mu\text{g} \cdot \text{at/l}$	pH	S CC
		STD	0000	0911	3457	2678	0012725	0000	14866	652							
137		OBS	0000	0911	34569	2678			14866	652							
		STD	0010	0873	3458	2685	0012088	0012	14853	650							
		STD	0020	0816	3461	2696	0011046	0024	14834	649							
137		OBS	0025	0780	34626	2703			14821	648							
		STD	0030	0718	3466	2715	0009327	0034	14798	649							
		STD	0050	0528	3475	2746	0006327	0050	14727	651							
137		OBS	0050	0528	34749	2746			14727	651							
		STD	0075	0422	3479	2762	0004871	0064	14687	644							
137		OBS	0075	0422	34793	2762			14687	644							
137		OBS	0098	0415	34820	2765			14689	644							
		STD	0100	0414	3482	2765	0004604	0076	14689	645							
		STD	0125	0406	3483	2767	0004471	0087	14689	657							
137		OBS	0148	0399	34840	2768			14690	663							
		STD	0150	0399	3484	2768	0004356	0098	14691	663							
137		OBS	T0198	0388	34845	2770			14694	658							
		STD	0200	0387	3484	2769	0004281	0120	14694	658							
		STD	0250	0371	3484	2771	0004164	0141	14695	657							
137		OBS	0297	0362	34838	2772			14699	656							
		STD	0300	0362	3484	2772	0004117	0161	14700	656							
137		OBS	0398	0359	34850	2773			14715	652							
		STD	0400	0359	3485	2773	0004097	0203	14715	652							
		STD	0500	0355	3486	2774	0004105	0244	14730	651							
		STD	0600	0351	3486	2775	0004109	0285	14745	650							
137		OBS	T0601	0351	34860	2775			14745	650							
		STD	0700	0349	3486	2775	0004151	0326	14761	651							
		STD	0800	0346	3487	2776	0004183	0368	14776	652							
137		OBS	0804	0346	34865	2776			14777	652							
		STD	0900	0366	3487	2774	0004455	0411	14802	652							
		STD	1000	0380	3487	2773	0004706	0457	14824	652							
137		OBS	1034	0382	34876	2773			14831	652							
		STD	1100	0372	3488	2774	0004623	0503	14838	651							
		STD	1200	0360	3488	2775	0004561	0549	14849	649							
		STD	1300	0352	3488	2776	0004545	0595	14863	645							
137		OBS	T1390	0349	34885	2777			14877	641							
		STD	1400	0349	3489	2777	0004514	0640	14879								
144		OBS	T1464	0349	34891	2777			14889								
		STD	1500	0349	3489	2777	0004575	0685	14896								
		STD	1750	0352	3491	2778	0004686	0801	14939								
144		OBS	1950	0354	34922	2779			14974								
		STD	2000	0352	3492	2780	0004772	0919	14982								
144		OBS	2420	0327	34937	2783			15043								
		STD	2500	0321	3494	2784	0004602	1154	15054								
144		OBS	2866	0278	34934	2787			15099								
		STD	3000	0255	3493	2789	0003985	1368	15113								
144		OBS	T3126	0229	34915	2790			15123								

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE ° ' 10	LONGITUDE ° ' 10	DATE 10	MARS DEN SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOD- STATION NUMBER
						10°	1°	MO	DAY	HR	1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TRF	AMT	

31	549	EV	5730 N	05155 W	185	71	08	11	008	1965	LCE	9507			3470	35	15	7	2		X6	5	8	0099
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WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			

		15	530	017	111	100	7	16	
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MESSAGE TIME HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	$\Sigma \Delta$ D DYN. M $\times 10^3$	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg · ml ⁻¹	TOTAL-P μg · ml ⁻¹	NO ₃ -N μg · ml ⁻¹	NO ₃ -N μg · ml ⁻¹	SIO ₄ -Si μg · ml ⁻¹	pH	S C
		STD	0000	0945	3454	2671	0013452	0000	14878	639							
008		OBS	0000	0945	34542	2671			14878	639							
		STD	0010	0880	3455	2682	0012415	0013	14855	647							
		STD	0020	0807	3457	2695	0011214	0025	14830	653							
008		OBS	0027	0750	34597	2705			14809	656							
		STD	0030	0712	3463	2713	0009470	0035	14795	657							
		STD	0050	0521	3477	2749	0006090	0051	14724	660							
008		OBS	0053	0502	34780	2752			14717	660							
		STD	0075	0452	3482	2761	0004983	0064	14700	657							
008		OBS	0080	0446	34824	2762			14699	656							
		STD	0100	0443	3486	2765	0004615	0076	14701	650							
008		OBS	0106	0441	34865	2766			14701	649							
		STD	0125	0430	3486	2767	0004474	0088	14700	650							
		STD	0150	0419	3486	2768	0004391	0099	14699	651							
008		OBS	0160	0415	34862	2768			14699	652							
		STD	0200	0406	3486	2769	0004298	0121	14702	661							
008		OBS	0213	0403	34864	2770			14703	663							
		STD	0250	0399	3486	2770	0004273	0142	14708	658							
		STD	0300	0391	3487	2771	0004230	0163	14712	653							
008		OBS	0319	0388	34865	2771			14714	652							
		STD	0400	0368	3486	2773	0004117	0205	14719	649							
008		OBS	T0427	0363	34855	2773			14721	648							
		STD	0500	0358	3486	2774	0004099	0246	14732	649							
		STD	0600	0353	3486	2774	0004131	0287	14746	650							
008		OBS	0639	0352	34863	2775			14752	650							
		STD	0700	0351	3487	2775	0004155	0329	14762	649							
		STD	0800	0349	3487	2775	0004193	0370	14778	649							
008		OBS	T0853	0348	34870	2776			14786	648							
		STD	0900	0347	3487	2776	0004237	0413	14794	650							
		STD	1000	0344	3487	2776	0004283	0455	14809	653							
008		OBS	1085	0343	34868	2776			14823	655							
		STD	1100	0343	3487	2776	0004352	0498	14825	655							
		STD	1200	0344	3487	2776	0004443	0542	14843	653							
		STD	1300	0345	3487	2776	0004532	0587	14860	650							
		STD	1400	0346	3488	2777	0004550	0633	14877	647							
		STD	1500	0347	3488	2777	0004639	0679	14894	644							
008		OBS	T1611	0348	34888	2777			14914	640							
		STD	1750	0348	3490	2778	0004700	0795	14937	631							
		STD	2000	0348	3492	2780	0004746	0913	14980	620							
017		OBS	2108	0348	34931	2781			14999	617							
		STD	2500	0323	3494	2783	0004645	1148	15055	617							
017		OBS	T2708	0302	34937	2785			15082	617							
		STD	3000	0265	3493	2788	0004134	1368	15117	624							
017		OBS	T3464	0185	34909	2793			15163	643							

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1-10	LONGITUDE ° 1-10	MARDEN SQUARE	STATION TIME (GMT)	YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
								CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT	

31	549	EV	5630 N	05100 W	186 61	08 11	132	1965	LCE	9508	3525	34	17	5	2		X2	6 8	0100
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WATER		WIND		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS	
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	BARO-METER (mba)	DRY BULB	WET BULB	VIS. CODE		
			29	524	027	111	089	7	17

MISSING TIME HR 1-10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- σ_t	S Δ D DYN. M. x 10 ³	SOUND VELOCITY	O ₂ ml/l	PO ₄ -P μg - dl/l	TOTAL-P μg - dl/l	NO ₃ -N μg - dl/l	NO ₃ -N μg - dl/l	SiO ₄ -Si μg - dl/l	pH	S C C
151		STD	0000	0895	3458	2682	0012385	0000	14860	640							
		OBS	0000	0895	34582	2682			14860	640							
		STD	0010	0891	3459	2683	0012318	0012	14860	641							
		STD	0020	0887	3459	2684	0012243	0025	14860	642							
151		OBS	0026	0884	34591	2684			14860	643							
		STD	0030	0808	3461	2698	0010949	0036	14832	639	062	111	020		009		
		STD	0050	0534	3470	2742	0006762	0054	14728	627							
151		OBS	0052	0517	34710	2745			14722	626	100	117	016	139	010		
		STD	0075	0460	3475	2755	0005564	0069	14703	630							
151		OBS	0078	0454	34760	2756			14701	631	109	132	003	156	010		
		STD	0100	0427	3476	2759	0005196	0083	14693	638							
151		OBS	0104	0423	34759	2759			14692		120	149	011	154	012		
		STD	0125	0401	3476	2762	0004930	0095	14686	645							
		STD	0150	0383	3477	2764	0004734	0108	14683	648							
151		OBS	0155	0381	34769	2764			14683	649	120	151	006	151	013		
		STD	0200	0377	3480	2767	0004480	0131	14689	649							
151		OBS	0207	0376	34806	2768			14690	649	139	182	009	156	015		
		STD	0250	0374	3482	2769	0004345	0153	14696	649							
		STD	0300	0371	3484	2771	0004209	0174	14704	650							
151		OBS	T0311	0370	34842	2771			14705		120	130	004	162	011		
		STD	0400	0360	3486	2773	0004064	0215	14716	651							
151		OBS	0414	0359	34858	2774			14718	651	105	113	002	164	010		
		STD	0500	0363	3487	2774	0004074	0256	14734	648							
		STD	0600	0367	3488	2775	0004135	0297	14752	645							
151		OBS	0621	0368	34886	2775			14756		112	120	000	163	010		
		STD	0700	0363	3489	2775	0004139	0338	14767	642							
		STD	0800	0358	3488	2776	0004183	0380	14782	640							
151		OBS	T0828	0357	34882	2776			14786	639	118	125	003	163	011		
		STD	0900	0356	3488	2776	0004244	0422	14798	638							
		STD	1000	0354	3488	2776	0004303	0465	14813	636							
		STD	1100	0353	3488	2776	0004366	0508	14830	634							
		STD	1200	0351	3489	2777	0004415	0552	14846	633							
		STD	1300	0349	3489	2777	0004464	0597	14862	631							
151		OBS	T1350	0348	34886	2777			14870		121	127	002	158	012		
		STD	1400	0347	3489	2777	0004489	0641	14878	630							
132		OBS	1449	0346	34898	2778			14886		128	132	004	160	012		
		STD	1500	0347	3490	2778	0004491	0686	14895	628							
		STD	1750	0351	3492	2779	0004589	0800	14939	625							
132		OBS	T1904	0353	34932	2780			14966	623	134	140	004	151	013		
		STD	2000	0349	3493	2781	0004658	0915	14981	622							
132		OBS	2419	0325	34942	2784			15042		130	138	004	166	014		
		STD	2500	0321	3494	2784	0004566	1146	15054	618							
132		OBS	T2919	0287	34943	2787			15112	614	123	132	004	151	016		
		STD	3000	0278	3494	2788	0004258	1367	15123	617							
132		OBS	T3419	0220	34910	2791			15171	638	126	137	004	143	015		

